

HERE we are again with another of our usual big numbers. Fact is, they are all big numbers nowadays, not that they have ever been small, for MoToR BOATING was always the biggest value for the money of any periodical of its class, but we are just making them better and bigger all of the time.

What do you like? What do you want? No matter what it is, we are almost sure that it is here. This is the racing season. Are you interested in knowing about the big classics of the motor boat world? There are stories in this number of the great Block Island Race, of the New York to Albany and Return Race, of the Cœur d'Alene Regatta on the Pacific Coast, and on the Carl Fisher Trophy Race for displacement boats.

Do you want some further information on constructing or caring for your craft? There are a bunch of stories dealing

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with these topics: "Chart Sketching for Motor Boatmen," "Compressing Comfort in a Cruiser," "Where Are We," an article on position finding, "What Should a Small Cruiser Be?" "Small Motor Boats, Their Care, Construction, and Equipment," which includes "Can You Make a Two-Cycle Motor Always Start?" "Tenders That Are Not Tender," "Interior Arrangement Possibilities in a 40-Footer"; "Starting Correctly to Build," in which is included "Featuring Deadwoods and Boring the Shaftlog," "My Ideal Auxiliary," a description of "Gob, a 28-Foot V-Bottom Auxiliary"; "Hints on Keeping the Motor in Shape," and a page of new devices suitable for use on motor boats; there are also cruise stories, descriptions of unusual boats and a page of pictured fashions of the smartest boating togs for the Madam and the Miss.

Hope you will like it as well as I do, for I think it's great:—  
CHARLES F. CHAPMAN, Editor.

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# The Advantages of Standardized Construction

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A comparison of the luxurious, thoroughly sea-

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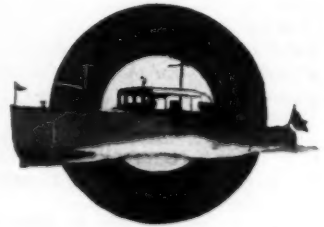
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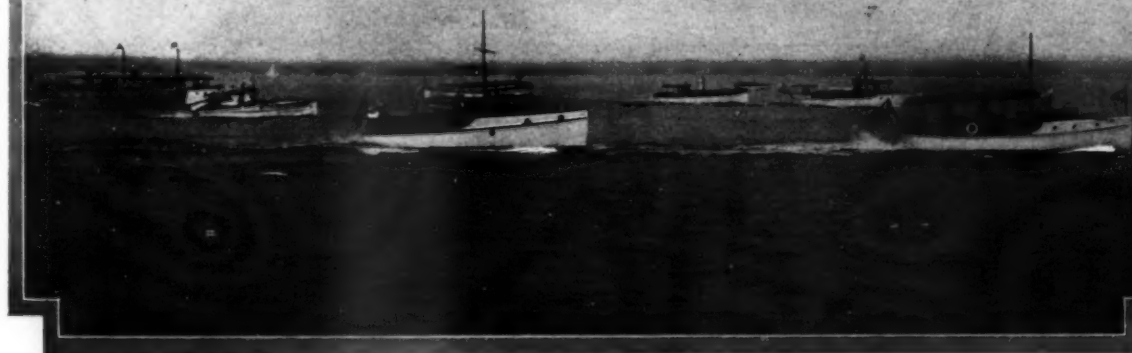
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Photographs by M. Rosenfeld

# MOTOR BOATING



Start of race to Block Island. Right to left: *Fire Fly*, *Gardenia*, *Victory II*, *Kodak*, *Lady Bird*, *Marilene II*, and *Albethwa*

## To Victory on Victory II

First Long Distance Race on Long Island Sound Since the War Shows a Revival of Interest in the Sport

By Charles F. Chapman

**M**OTOR boat racing in the east has "come back" and come back strong. The successful races on the Delaware earlier in the season demonstrated a revival was to be expected. The most recent proof that the sport is not dead is to be found by studying the record of results of the Tenth Annual Race of the New York Athletic Club to Block Island, held on July 12, and no further proof will be necessary.

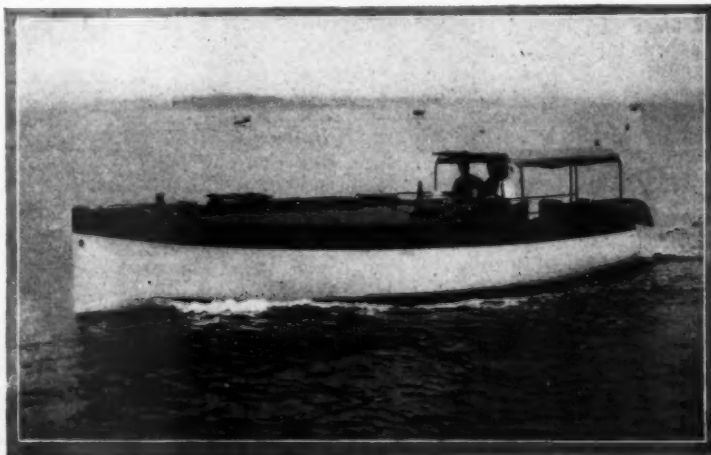
The Block Island Race is without a doubt our oldest classic. When it was established in 1909, a trip to the Island in a small motor cruiser was a feat long to be thought about before signing one's name to the entry blank. A 100-mile non-stop-run, a third of which was in the open ocean, in those days was a real achievement, yet the fact that cruisers under 40 feet in length—the race conditions restricted the entries to boats of that length or less—would and could make the run without engine trouble and with little or no risk did much to give the old sailorman and boating enthusiasts confidence in the small motor boat and internal combustion motor. In this way the ocean races have

done much to develop hulls and power plants to be seaworthy and reliable. Naval architects and engine manufacturers were not slow to take advantage of the lessons learned in the first ocean races, and now we have designs and products which are approaching perfection.

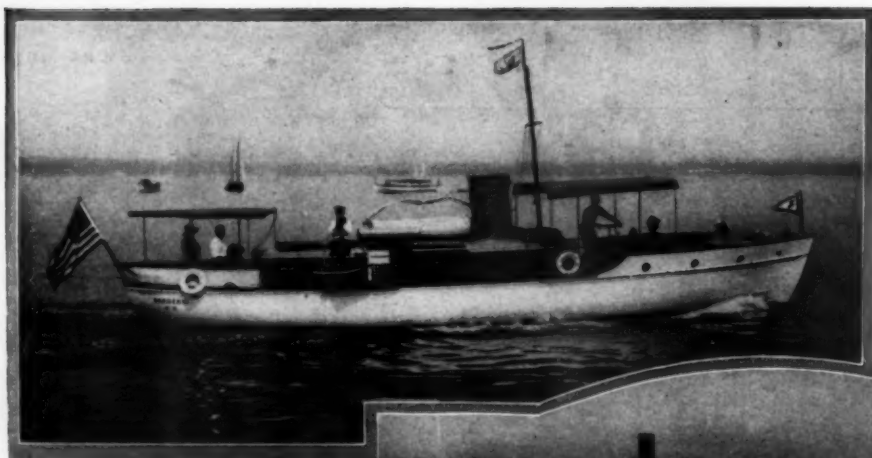
In this year's Block Island Race history reversed itself. The race has always had classes for both sailing and motor craft. Heretofore, the sail boats have outnumbered the motor boats—some years five to one—but this year probably for the first time, motor craft were more numerous and most of the interest centered around them.

Altogether nine motor cruisers started—there were two other entrants which failed to appear for the start. Two classes were provided—the dividing line being a 40-foot length. The smaller class made by far the best showing as all the five starters reached the finish line at the new harbor at Block Island about midnight while only two of the four big boats to start reached the finish.

Entered in the class between 40 and 50 feet were *Gardenia*, a 48-footer,



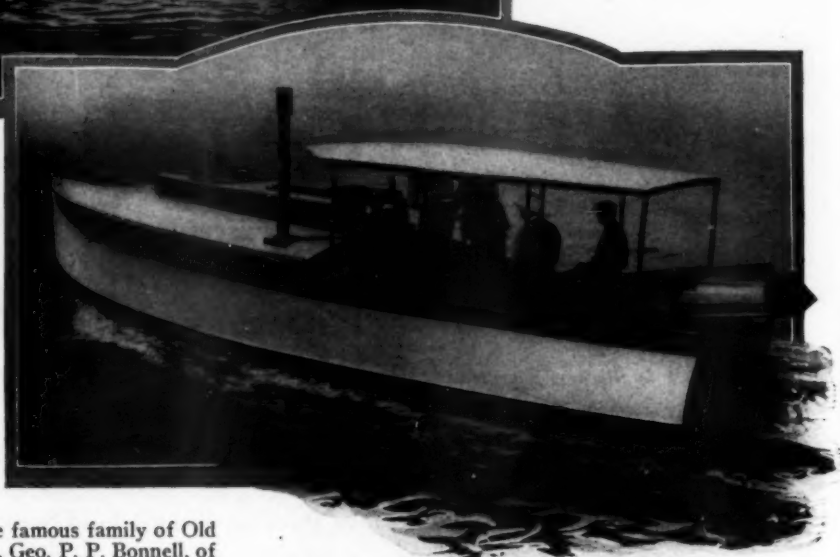
*Victory II*, owned by H. A. Jackson, winner of first prize in Class B. Her power is a 20-30 H.P. Sterling



*Gardenia, owned by Harry Anderson, winner of the trophy offered by Commodore Sunderland of N. Y. A. C.*

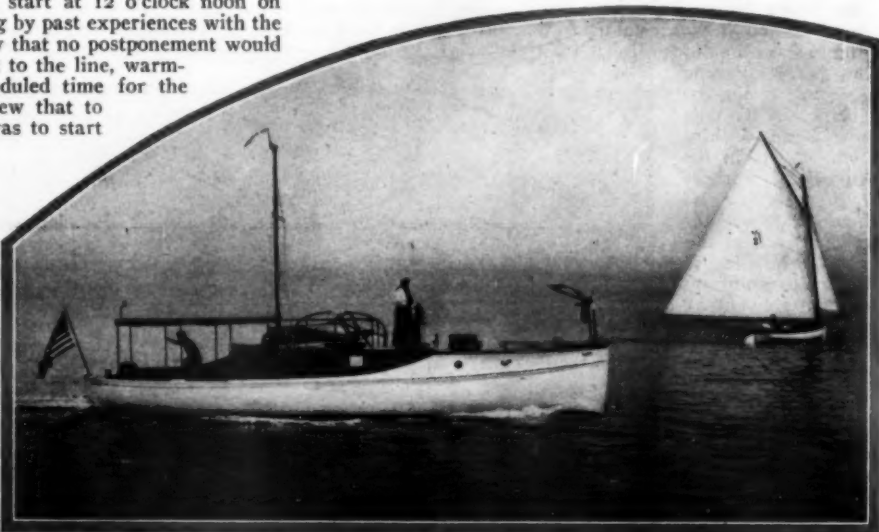
owned by Harry Anderson and powered with a four-cylinder standard motor; Uonda, a new cruiser in the racing game, owned by A. B. Duryee, of the Huguenot Yacht Club, 42 feet in length and powered with a three-cylinder Lamb engine; Marilene II, flagship of the United States Power Squadrons, owned by Chief Commander H. M. Williams, and Albethwa, a 50-footer, powered with a four-cylinder Standard engine. In the class of cruisers of under 40 feet in length was the 36-foot Victory II, owned by H. A. Jackson; Kodak, a 34-footer, owned by R. J. Haslinger, of Hudson River Yacht Club; Old Glory IV, the fourth of the famous family of Old Glories, built and sailed by her owner, Geo. P. P. Bonnell, of the Byram River Yacht Club; Fire Fly, another new racer, owned by A. E. Aitken, of the New York Athletic Club, and Lady Bird, owned by W. S. Deane, of the Knickerbocker Yacht Club. Victory II and Kodak were powered with similar motors, 20-35 h.p. Sterlings and finished first and second respectively on corrected time, being only a few minutes apart at the end of the 100-nautical-mile run. Victory was designed and built by the Luders Marine Const. Co. Old Glory IV had a three-cylinder Loew-Victor motor which did not do justice to the hull; Fire Fly had a Wood & Chute engine and Lady Bird a Peerless.

The race was scheduled to start at 12 o'clock noon on Saturday, July 12, and profiting by past experiences with the N. Y. A. C., the captains knew that no postponement would be considered, so all were out to the line, warming up, well before the scheduled time for the start. We on Victory II knew that to win against such a field as was to start we must take advantage of every point by which we could gain a few seconds, so we prepared to get the jump on the rest of the boats at the start. After we were sure that our Sterling had warmed up to its maximum revolutions, we ran across the starting line boat at full speed in the opposite direction that we would be going at the time of the start. When we had run for exactly one minute by the stop watch, we dropped a buoy and anchor overboard which we had prepared beforehand, thus marking a position exactly one minute from the start-



*Old Glory IV, a V-bottom cruiser, owned by Geo. P. P. Bonnell*

ing line. Then by proceeding a definite distance further we were able to determine exactly how long it would take us to reach the starting line. If we reached our anchored buoy at exactly one minute before the gun, then we should go over the line at the proper moment at full speed, but should we pass the buoy before the minute interval, then there would be danger of crossing before the gun, which, of course, would be bad for us. We practiced a start with the preparatory gun, five minutes before the start, and



*Uonda, owned by Andrew B. Duryee of the Huguenot Yacht Club, second in Class A*

Ready for the grind—left to right: Two members of the crew of Uonda, Commodore Jackson of Victory, Commander Williams of Marilene II, "Andy" Duryce, owner of Uonda; F. W. Horenburger, mate of Victory II

Commodore Sunderland of the N. Y. A. C., judge and host at the finish line at Block Island



boat Nehama on the south end and the stake boat Indian on the north. As he was sailing from south to north he had the rest of the fleet on his port hand, which consequently gave him the right of way and made all other boats give way to him. In this way he didn't have to worry about the exact time, for when he heard the gun he would put his helm hard a port and he'd be over the line before the smoke had cleared away.

it was a tense moment but worked perfectly in action. At 11:59:02 we passed our marker going at full speed with two seconds' leeway for failure of the gun to go off on time. We were astern of nearly the entire fleet, but as they were working up to the line with slipping clutches we soon had passed most of them. Gardenia with Commodore Anderson at the wheel tried his old trick of sailing along the starting line established between the Committee

Gardenia was first over the line hardly a second late. Fire Fly also made a beautiful start. Victory was not more than three seconds late and directly astern of Gardenia with less than ten feet separating the two boats. Old Glory was not far behind and then followed Kodak, Marilene II, Albethwa, Lady Bird and Uonda in the order named.

Great indignation soon arose from the bridge of Gardenia, whose owner thought our proximity to his stern was slowing him down and would put him out of the running in his class. Up to now he had considered that his craft had at least a mile an hour the edge on Victory's speed, yet we were holding him in spite of his strenuous efforts to get away.

The rest of the fleet were well bunched also. Twenty minutes after the start Old Glory IV, although in the small class, had taken the lead by a wonderful burst of speed soon after the starting gun. Gardenia was 100 yards astern and Victory II was practically on even terms with Commodore Anderson's boat, although we had pulled out of his wake and exploded his theory that he was dragging us along and holding him back. Marilene II, which should have been the leading boat by this time according to the figures before the start, was in fourth place and apparently not gaining. It was evident that all was not serene aboard, although the Commodore at the wheel was as calm as usual and still wore his accustomed good-natured smile. Yet the exhaust from her Buffalo engine looked as though



The two winning Commodores—Anderson of Gardenia and Jackson of Victory II. The latter is getting a noon sight—not of the lone hair on Commodore Anderson's head as might appear



# Chart Sketching for Motor Boatmen

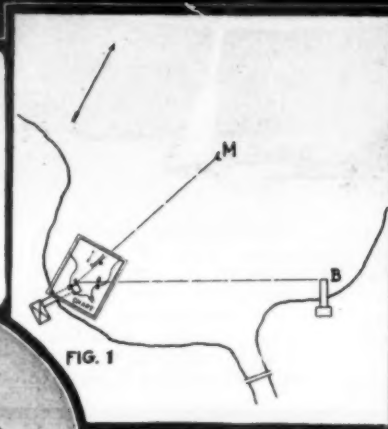
The Field of Usefulness and the Limitations of Home-made Sketch Charts, with Some Suggestions for Improving Their Accuracy

By W. M. Angas

THE making of charts, especially the drawing of home-made charts, will always be of interest to the yachtsman and motor boatman who is anything of an amateur navigator. When a new channel across some shoal or through some intricate part of an inland waterway has been discovered, how can it be better described to friends or fellow club members than by a well drawn sketch chart or a carefully made sketch on a Government chart? If a difficult trip through an inside passage is being made and is to be repeated next year there is no better way of impressing important details of the channel on the mind and avoiding future trouble than by sketching the more difficult bits of channel when first traversing them and referring to the sketches before and during the second passage. Needless



Using a plane table is the regular instrument and the alidade consists of a telescope fitted with cross hairs mounted on a steel straight edge



The mooring "M" is to be located on the chart upon which the piers "A" and "B" are already located. The chart is taken to the head of pier "A" and is oriented by making the line of sight over points "A" and "B" point straight at "B". After the chart is oriented the line is drawn towards "M" as shown



A rough home made alidade and plane table in use. The alidade consists of a straight edge with sights like those on the sight vane of a compass or pelorus fixed to it. The plane table is merely a small drawing board to the lower side of which a small plate is attached which has been drilled and tapped for a quarter inch bolt. This permits the board to be mounted on a small camera tripod

to say such a set of sketch charts would be invaluable to some friend making the trip later on, and the amateur who takes pride in his skill as a small boat pilot and navigator will naturally want to have such sketch charts of his own making for the use of himself and his friends.

It should not be imagined that the home-made drawings which are to be described take the place of the regular Government charts, they merely amend and amplify those invaluable publications. In fact sketch charts are largely dependant upon the Government sheets, inasmuch as they are usually made with the help of a Government chart of the body of water to be sketched, even though this Government chart may be hopelessly out of date and may indicate conditions that have not existed for twenty years.

Though an experienced hand can sketch a channel with

almost amazing rapidity and accuracy, and may appear to do this just as one makes any free-hand sketch, it will generally be true that the draftsman is employing some of the principles of the "plane table" method of surveying in the work and because they can be applied to the

making of even the most hurriedly drawn sketch charts these principles will be described at some length. The other two general methods of making surveys that are in use by civil engineers will not be touched upon as they are of interest to the civil engineer alone and presuppose the use of instruments not likely to be possessed by the yachtsman. The "plane table" from which the method of surveying to be described gets its name, is nothing more than a light, portable drafting table mounted on a tripod and carried from one part of the area to be mapped to another as the draftsman desires. In the amateur's case a light drawing board will take the place of the more or less elaborate plane table and no tripod will be necessary as the board will be placed on any convenient support when it is to be used. With the plane table is used an instrument consisting of a straight edge with some sort of a sighting device attached to it so that the line over the sights is parallel to the edge of the straight edge. Alidades, as they are called by civil engineers, are sometimes elaborate instruments with telescopes fitted with cross hairs instead of sights, but for the making of sketch charts no more elaborate alidade will be needed than a simple straight edge or at best a straight edge fitted with sights like the sight vane on a compass.

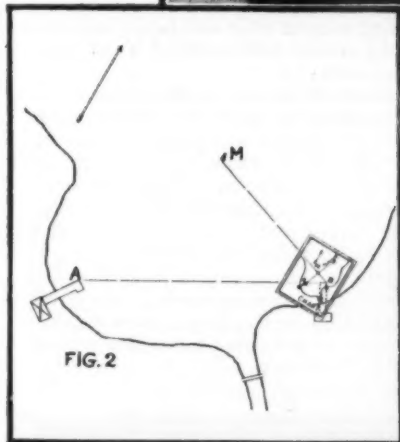
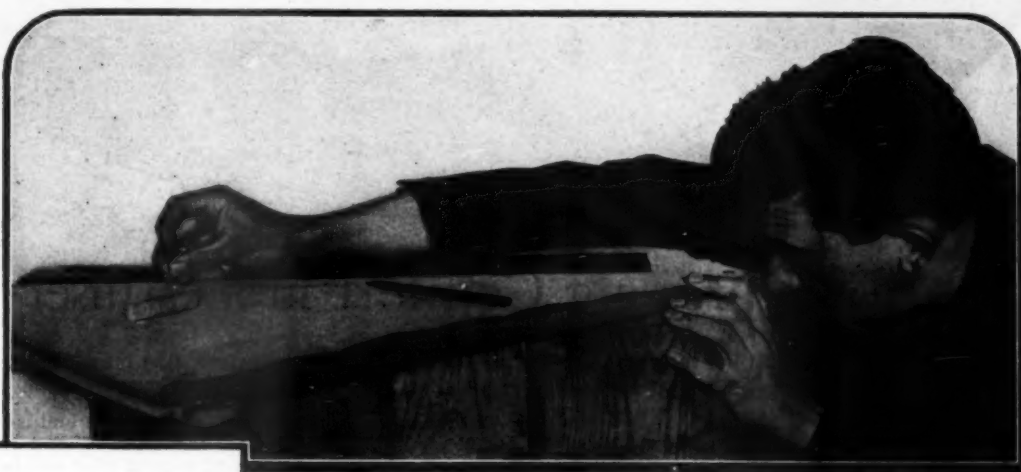
The work of drawing a map by the plane table method

is actually done out of doors on the site of the ground to be mapped and is not done in the drafting room from notes or mathematical data taken in the field. The principle of the method can best be explained by considering a simple case such as is illustrated in Figs. 1 and 2. The position of the mooring "M" is to be located on a chart by the plane table method, the two pier heads having already been accurately located on the chart. The chart is mounted on the plane table which is first set up at the point "A" and oriented, or arranged so that directions on the chart correspond exactly to actual directions. This is done by placing the alidade so that its ruling edge passes through the positions of "A" and "B" on the chart and then turning the whole table with the alidade on it until the sights of the instrument point directly at "B". This proceeding orients the table correctly or makes each line on the chart parallel to the actual line which it represents. The table

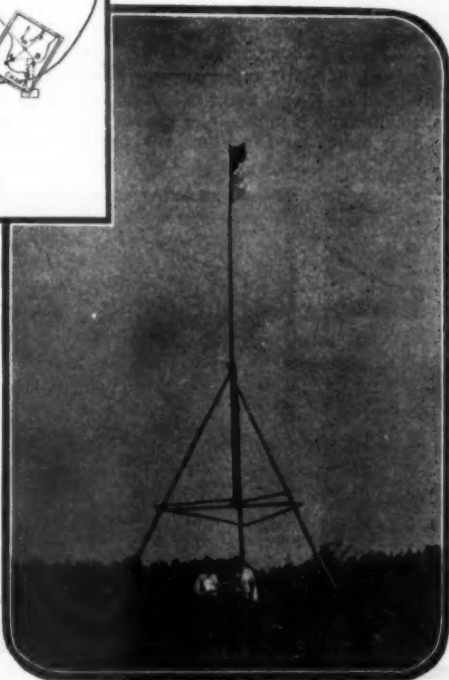
to be plotted on the chart, the length of the line being dictated by the judgment of the draftsman. When the line "AM" has been drawn and labeled the plane table is taken to the point "B", is oriented as before, and the line "BM" is drawn on the chart. The intersection of "AM" gives the position of "M" on the chart. This short description gives only the main feature of this method of map drawing and is used because it illustrates the basic principle of the plane table method. It is not probable that the plane table method would ever be used to locate a mooring on a chart which had already been drawn, but one can very easily imagine how this principle of locating objects on the chart by the intersection of lines may be developed into a system of map drawing.

In making a sketch chart of a body of water of considerable size, as for instance in sketching the channel across one of the numerous inlets on the inside passage

*Right: Using pins and a straight edge as an alidade in plane table work. Pins define a line of sight which is recorded by pushing the straight edge up against them and ruling a line of the desired length. In this case the navigator's parallel rule is used as a straight edge*



*A triangulation station occupied by a plane table party. In an elaborate hydrographic survey these stations are located by triangulation and then the details of shore line, etc., are put in with the plane table*

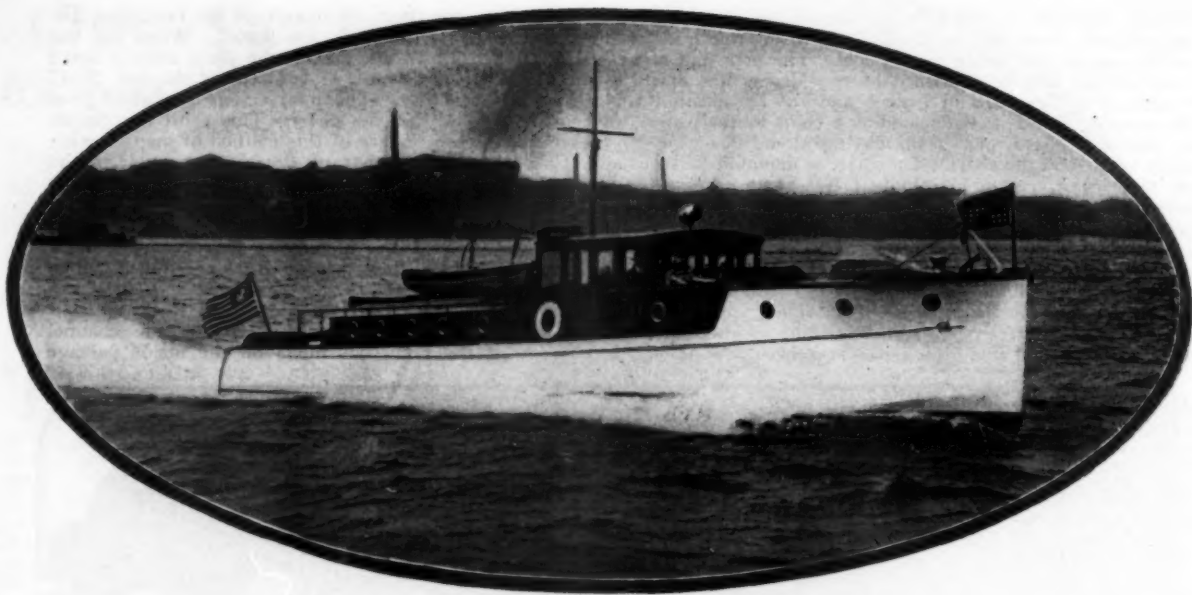


*After the line from "A" towards "M" has been drawn the chart is taken to "B", is oriented as before, and a line from "B" is drawn towards "M". The intersection of the two lines locates "M"*

having been oriented the alidade is swung around until the sights fall on the mooring "M" while the ruling edge still passes through the plotted position of "A"; a line is then drawn through "A" in the direction of "M". This line is drawn so that it will certainly reach beyond the position of "M"

south, up-to-date charts of which are not obtainable, the first thing to be done is to decide upon just how much of the inlet is to be sketched and the scale upon which the drawing is to be made. The sketch will, of course, need to show the area which is not properly mapped on the out-of-date chart which is probably on hand. If this chart is on a large enough scale to allow all features of the channel to be shown it will be well to make the sketch chart on the same scale, but in most cases an enlarged scale will be needed to avoid crowding detail into a pencil drawing, the lines of which are naturally much coarser than the engraved lines of the Government chart. It is best to choose a scale for the sketch which is some simple multiple of the scale of the Government chart, such as one and one-half or two. It is awkward to make a sketch one and one-third the scale of the Government chart and such multiples are therefore to be avoided. The unchanging features of the Government chart, such as permanent aids to navigation, prominent buildings, wharves, reefs of rock, and shore lines which have evidently not recently shifted can be transferred to the sketch by first drawing on it the parallels of latitude and the meridians of longitude and with the aid of these reference lines copying the Government chart. When this copying is done particular care should be given to the accurate location of two or three places which are to be used as the plane table stations. Pier heads generally make good stations as they command a good view and their positions are usually marked on the Government chart,

*(Continued on page 53)*



## Compressing Comfort in a Cruiser

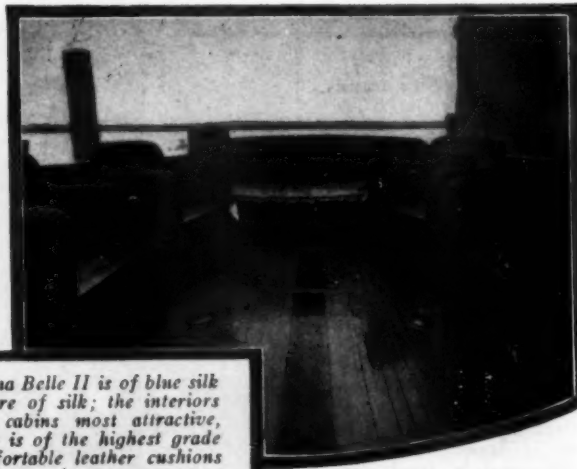
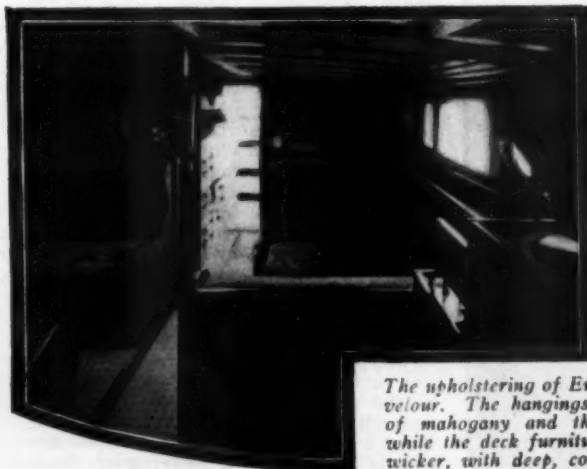
The Latest Stutz 60-Footer a Marvel of Ingenuity with a Speed of Over 23 M. P. H.

**T**HE latest Stutz cruiser, like its predecessors embodies features that are usually not found in many other craft, and the Great Lakes Boat Bldg. Corp., of Milwaukee, Wis., who have constructed this last boat for Harry C. Stutz, of Indianapolis, have turned out a craft that will doubtless serve as a model for some time to come. Mr. Stutz, is one of the most consistent motor boat builders in the United States, and each time he decides on a new boat he embodies all of the good features of those which have gone before, plus his experience, which makes a sum total of some craft.

Emma Belle II as this handsome motor yacht has been christened, is a 60-footer in which accommodations have been provided for main stateroom, owner's stateroom, crew's quarters, galley, guests' stateroom, engine compartment, enclosed bridge deck and all of unusual roominess. Yet, withal, this craft developed a turn of speed on her trial trips of 23.1 m.p.h., with a pair of six-cylinder Sterling engines. In view of the fact that the boat is built

very heavily throughout and that the hull is of seam batten construction, the speed developed is most remarkable and shows in a very striking manner what can be accomplished in a safe and seaworthy cruiser with modified V- or wave-collecting type running lines.

The very highest standards known to the pleasure boat industry are used in constructing all of the Stutz cruisers, and Emma Belle II, is, of course, no exception. The upholstery is of blue silk velour, which, together with the silk hangings, and the interiors done in mahogany throughout, affords most attractive accommodations. The compartments are electric lighted and screened. The electric unit is a  $\frac{3}{4}$  kilowatt Delco plant installed in the engine compartment. All controls are carried to the bridge deck for one-man operation. This compartment is completely enclosed so as to afford full protection in inclement weather. Emma Belle II will cruise on the Great Lakes this summer and in Florida waters in the winter.

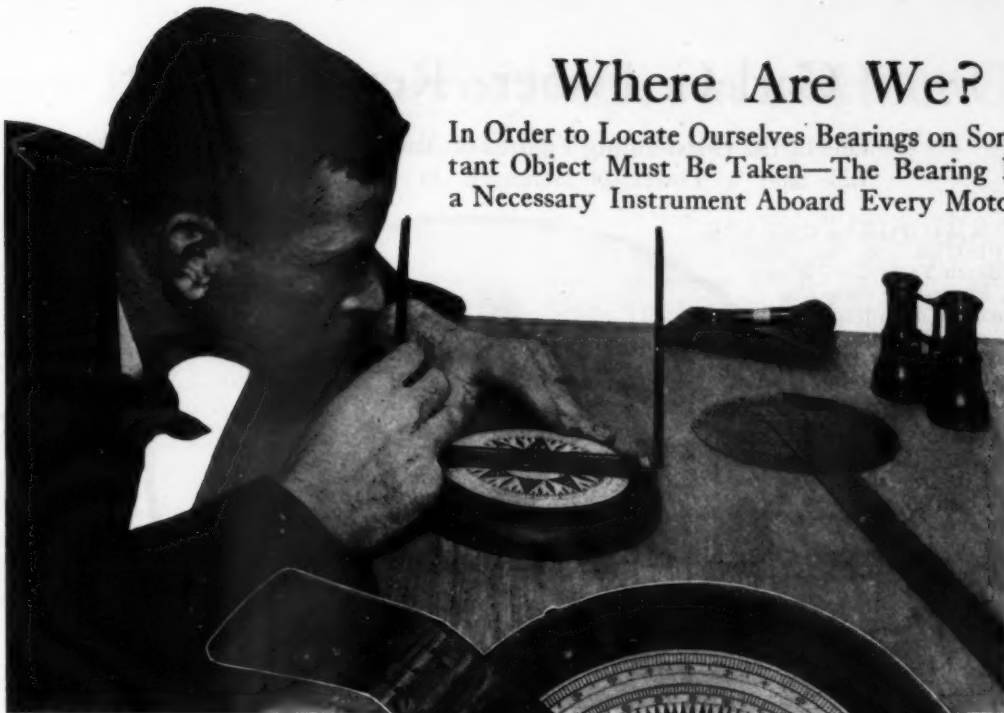


*The upholstery of Emma Belle II is of blue silk velour. The hangings are of silk; the interiors of mahogany and the cabins most attractive, while the deck furniture is of the highest grade wicker, with deep, comfortable leather cushions*



## Where Are We?

In Order to Locate Ourselves Bearings on Some Distant Object Must Be Taken—The Bearing Finder, a Necessary Instrument Aboard Every Motor Boat



A BOAT'S position at sea can be located by several different means, but the best of these methods involves the taking of bearings on one or more objects. In order to find out in what direction a distinct object such as a lighthouse, beacon, headland, or other mark, bears, some form of instrument such as a bearing finder or polaris must be used. There are numerous forms on the market which permit a bearing to be taken with the greatest accuracy, provided the observer is familiar with his instrument and knows how to use it. But most of the instruments to be had, besides being very expensive, require a certain amount of practice before their results can be depended upon. However, the motor boatman need have no hesitancy about cruising to his heart's content on unfamiliar waters simply because he is unable to possess one of the elaborate and expensive instruments.

In a few hours' time, with a little care and patience, one can construct a bearing finder for himself which will answer all of the requirements of those used on the finest steam yachts or ocean-going liners.

To construct this bearing finder, first secure a compass



*A close-up of the bearing finder*



*The bearing finder in place on a motor cruiser*

card of at least 6 inches in diameter. One having both points and degrees marked on it is preferable, and if it is possible to get one made of celluloid, so much the better; but good stiff cardboard will do. Such cards are largely given away for advertising purposes, but should the motor boatman be unable to secure one he can easily draw one up for himself. The editor of *MoToR BOATING* will be glad to send you one gratis.

The compass card is mounted on a block of hard wood as shown in the illustration. The block can either be circular or rectangular in shape and should have at its center a threaded bolt with a wing nut, which is used to hold the card and sighting vane in place. There are four sets of tacks near the edge of the wooden block, located 90 degrees apart. One set of these tacks represents the bow of the boat, in exactly the same way as the lubber line on the inside bowl of the compass does.

The only other essential part of our bearing finder is the sighting vane, which consists of three thin pieces of wood, preferably mahogany, shaped and cut as shown, and connected together by some brass hinges. One of the uprights of the sighting vane has its center cut out for nearly its entire length and a fine wire stretched down the center of the aperture. The other upright is solid with the exception

*(Continued on page 58)*

# Carl G. Fisher—Revolutionist

One of the Outstanding Figures of American Public and Private Life and a Tower of Strength in the Motor Boat World

**C**OMMODORE CARL G. FISHER, of the Miami Beach Yacht Club, Miami Beach, Fla., whose outspoken condemnation of hydroplane racing and advocacy of displacement contests, culminating in the gift of the Fisher Challenge Trophy for displacement races to be conducted under the auspices of the American Power-Boat Association, promises to revolutionize motor boat racing and to direct the activity of builders and racing enthusiasts into new and practical channels, with marked improvement in boat construction as a result, is one of the outstanding figures of American public and private life.

Mr. Fisher was so disappointed in the delays and bad starts at the Gold Cup Races at Detroit last year that after waiting for several days for something to happen in the motor boat racing line to repay him for his trip to Detroit he decided that he would offer a trophy for boats that would run, and calling Commodore Albert L. Judson, president of the American Power-Boat Association, and Charles F. Chapman, editor of *MoToR BoATING* and secretary of the association, to him, he announced the gift of a \$5,000 trophy to be held permanently and an additional trophy of \$1,000 a year for a displacement boat race, the only condition being that race must start at 3 o'clock on the day scheduled, irrespective of any factor tending to delay it. The first match for this trophy is to take place on Lake George in the summer of 1920; the second at Miami, Fla., during the winter of 1920-21, and the third at Detroit during the summer of 1921.

Typically American in his self-made career of business achievement, and with a Rooseveltian capacity for attaining distinction in widely varying fields of endeavor. Successful manufacturer, real estate promoter, good roads advocate, yachtsman, balloonist, and polo, tennis, baseball, swimming, canoeing, aviation, and bicycle and automobile

racing enthusiast, Commodore Fisher has succeeded in filling his life with a diversity of business and sporting interests that is truly remarkable.

Though inland born and bred, Commodore Fisher's love of water sports has been one of his distinguishing characteristics since boyhood days. He came to nationwide attention in the realm of aquatic sport through his promotion of the Miami Mid-Winter Regatta, which, during the last half dozen years, has loomed up with ever-increasing magnitude on the calendar of the world's motor boating contests, until today it rivals the Amer-

ican Power-Boat Association championship races on Lake George and the Detroit River, and the contests of the Mississippi Power Boat Association in interest and importance.

(Continued on page 82)



Carl G. Fisher, premier motor boating enthusiast of many waters and well known in boating circles throughout the entire country. Mr. Fisher is the donor of the Fisher Trophy, valued at \$5,000 and an annual prize in addition of \$1,000 for a high speed displacement boat race each year. These are the most valuable prizes offered for motor boats. At the left is the Fisher home at Miami, Fla.



# Three Hundred Years of History in a 3-Hour Cruise

A Three-Hour Trip or a Three Day Trip at the Doorstep of New York

By Harwood Koppel

FOR the busy man of Manhattan who cannot find the time to take a long distance cruise, there is at his very doorstep scenery of magnificent grandeur and historic interest, which would ordinarily bring cruising enthusiasts on cruises of days to view. It may be trite, but it is undoubtedly true that familiarity breeds contempt, and so, just because the average New Yorker has been viewing the Palisades all of his life from the opposite shore mainly, he scorns to go cruising along their beautiful shore line and to stop and view their historic spots. Yet, it is doubtful if there is another stretch of waterfront in the United States that combines more of beauty and historic associations than do the stretches of the Palisades, from their beginning at Bergen, just above Fort Lee, N. J., to Piermont, N. Y., a distance of sixteen miles.

Within the environs of New York City, along the Hudson River, are numerous yacht clubs with scores of motor boats dotting the waters in their vicinity, many of them lying at anchor, idle, simply because their owners cannot find time for even a week-end cruise. It seems to occur to few of them that there is a cruise that can be made on a Saturday afternoon or a Sunday that will prove a delightful revelation to the man who has a bit of romance in his soul. The early history of the Palisades is so closely interwoven with that of Manhattan Isle, and so many dramatic incidents of the early days of the Metropolis took place on these towering cliffs that every little distance one may find a place where it is worth his while to disembark for a few minutes and give it the once over. In order to facilitate landings by cruising parties the Commissioners of the Palisades Interstate Park, as that part of the Palisades between the river bank and the cliffs is known, have constructed landings and boat pens where the craft may be tied up, under the watchful eyes of the park policemen while the owner and his friends scamper up the slopes to view the places famed in the history of New York State and the nation.

It was from the Palisades that the Indians first gazed in wonder at Hendrick Hudson's Half Moon, when that intrepid adventurer and explorer reached these shores in his quest for the Northwest Passage. That was on the morn-

ing of September 12, 1609, or just 310 years ago. These Indians were of the Tappan, Sanhikan, Raritan, and Hackensack tribes of the Delaware nation. It is popularly supposed that Hudson anchored Half Moon just off Indian Head rock, one of the predominant features of the Palisades, which bears a striking resemblance to the Noble Red Man. And incidentally motor boatmen may ponder over the fact that this was the first time that an anchor had ever been dropped into the waters of the Ma-hi-can-ittuck River, which was the name the Indians had christened the Hudson.

Later, when the settlers began to arrive a settlement sprang up on the present site of Jersey City Heights, and was called Bergen. Governor Peter Stuyvesant of Manhattan directed Jacques Cortelyou, a surveyor, to lay out this village in 1660. During the revolutionary war Bergen was abandoned by the American forces and occupied by the British from October 5, 1776, until the end of the conflict.

Hoboken, was the Indian name for the village that stood on the site of Hoboken, and here it was that John Stevens, member of the Continental Congress, an associate of Robert Fulton, and the inventor of the screw propeller, which makes motor boating possible, built "Stevens Castle," on

(Continued on page 60)



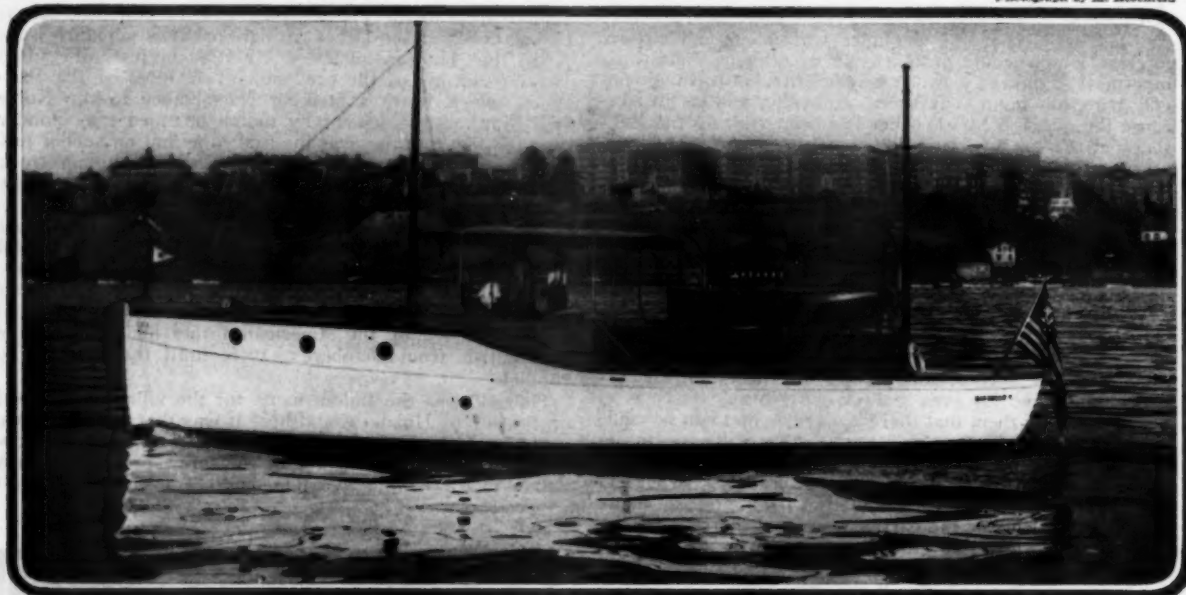
One may spend three hours or three days cruising along the Palisades and always find something interesting or historical!



# Maybelle V Wins New York to Albany Race

Commodore H. C. Vaughan Captures Annual Event Restored  
Since the End of the War in Most Severe Weather in Many Years

Photograph by M. Rosenfeld



*Maybelle V, powered with a Clay heavy-duty engine, captured the New York-Albany Race this season handily, running away from her competitors. She ploughed through a raging storm but never even hesitated*

**T**HIS year's New York to Albany and return race, which was won by Commodore H. C. Vaughan in his cruiser Maybelle V, of the fleet of the New York Motor Boat Club, was more of an endurance contest for the boats than a real race. The weather on the trip up was terrific, with heavy seas, head winds and blinding sheets of rain. It was perhaps the worst weather in which the race had ever been run, and Lady Bird, commanded by W. C. Deane, of the Knickerbocker Yacht Club, was so buffeted about that the strain on her engine put her out of commission at West Point on the trip up and she did not finish.

Four boats entered for the race, which began at 7 P.M. Friday, June 27. These were all cruisers and are in the order in which they finished: Maybelle V, New York Motor Boat Club, H. C. Vaughan; Kitty C II, New York Motor Boat Club, C. Carlson; Sea Horse, North Hudson Yacht Club, J. F. Mallard; Lady Bird, Knickerbocker Yacht Club, W. C. Deane. The race was under the A. P. B. A. rules for boats under 50 feet of length over all as defined in 1919.

The course was from the New York Motor Boat clubhouse, Hudson River, at 147 St., to the railroad bridge off the Albany Yacht Club, Albany, and return, disregarding government aids, a distance of 235 nautical miles. All boats were required to finish within forty-eight hours. A. P. B. A. requirements as to glass cabins, self-bailing cockpit, dinghy, etc., were waived. Boats were rated and handicapped according to the 1919 A. P. B. A. rules.

The race as seen from the winning boat was described by Commodore Vaughan:

"Almost at once the rain began falling and soon we were in the midst of a heavy storm, which lasted with cyclonic fury until we reached Newburgh. The wind was almost

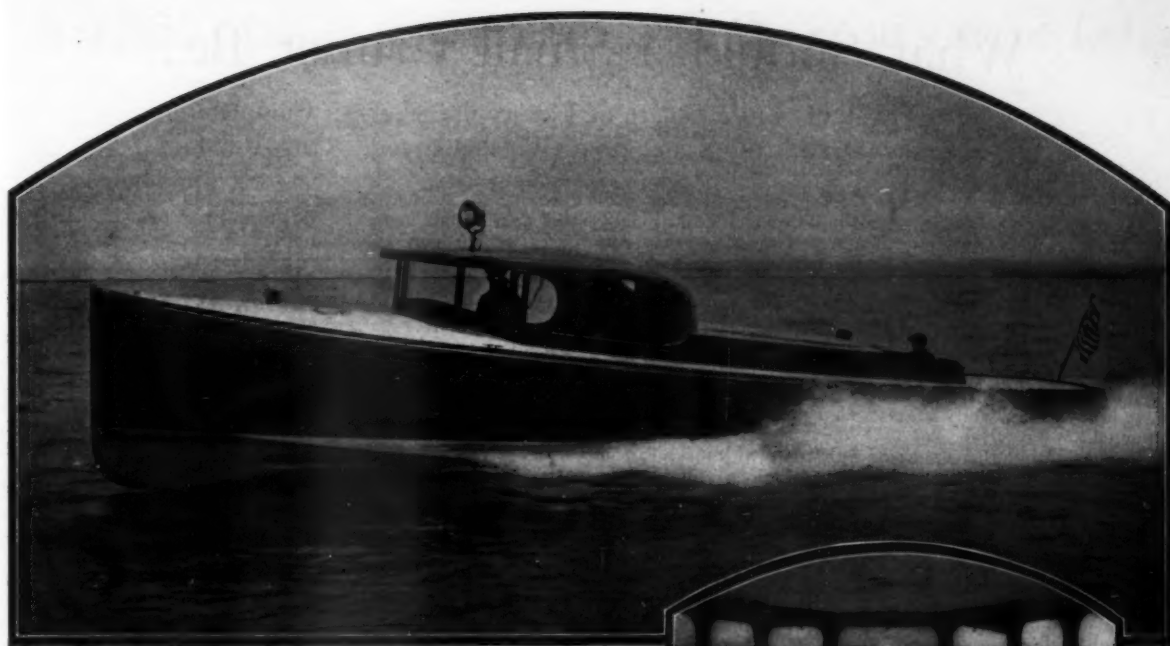
due north and blowing hard, so hard that, although I have sailed this course and this race a good many times, I have never seen it worse. When the wind got north we were making 400 r.p.m., but the waves began breaking across our bows with such force as to threaten us with being wrecked, so we cut the revolutions to 340, as it was too dangerous to plough through at the higher speed. It let up some about 3 A.M., but all the next day there was a heavy sea running.

"The storm had its effect on Lady Bird, which broke down at West Point, and after that we did not sight any of the other craft until it got dark. At daybreak we picked up Kitty C about a mile behind us and we ran practically together to the Albany Yacht Club. We bucked the tide all of the way. Kitty C reached Albany at 1:40 and we got there six minutes later. In making the dock they had trouble with their ignition and became stalled. It looked like he wouldn't be able to get under way, and as there was no other boat in sight I suggested that since we were both from the same club we call the race off. We lay there two hours making repairs, Maybelle V having loaned Kitty C a mechanic from our crew. She had tried to take gas somewhere and had gotten water in the gas through the funnel and between the water and the ignition she was in serious trouble.

"At 3:45, when we were just ready to start, Sea Horse hove in sight coming up the river, and so we called the truce off and got under way. Sea Horse was in sight of us until we reached Hudson, where we lost her. The sea was still heavy, but the trip down was not quite uneventful. At Bear Mountain a small motor boat was moored near the shore, but in the fairway. There were no riding lights on

(Continued on page 96)

Boat	Owner	Motor	Bore and Stroke	No. of Cyl.	R.P.M.	H.P.	Rating	L.O.A.	L.W.L.	B.W.L.	Beam	M.S.	Time Allowance	Elapsed Time	Corrected Time
Maybelle V	H. C. Vaughan	Clay	7 1/2 x 7 1/4	2	400	19.88	34.23	40.708	37.833	9.165	11.125	10.313	4:19.50	36:10.30	31:50.40
Kitty C II	C. Carlson	Sterling	3 3/4 x 5 1/4	4	610	12.346	34.59	27.958	25.625	6.083	7.083	6.338	4:02.00	44:40.00	40:38.00
Sea Horse	J. F. Mallard	Palmer	5 x 6	3	480	14.134	33.67	30.833	28.083	8.208	9.375	8.553	4:23.37	49:21.00	44:57.23
Lady Bird	W. C. Deane	Peerless	4 x 6	4	870	21.87	40.45	29.25	28.625	7.000	8.312	6.125	Allows	Did not finish	



## A Pioneer Type of the Western Lakes Proves an Eastern Favorite



**S**INCE it is possible to secure a Sedan type motor boat within a comparatively short time, the boat yards have received orders this season for quite a few such craft and accordingly the designers have been vying with each other in designing distinctive types. Of these the one illustrated herewith, designed and built by the Great Lakes Boat Building Corp., of Milwaukee, Wis., for C. C. Pape, of St. Louis and New York, is a pioneer of the western lakes that has been much admired and is now to be duplicated by eastern yachtsmen. This craft, a 48-footer, embodies all of the comforts of the day cruiser.

Complete enclosure of the Sedan cabin is provided by an automobile type limousine top with windows. The forward compartment has a seating capacity for four on the big upholstered seat, which runs athwartships, and for six in wicker chairs provided as part of the equipment. An after cockpit has been worked out for the engineer. This compartment is provided with a windshield and a removable canopy top.

*The outstanding feature of this new type of boat is high speed combined with seaworthiness and comfort. This Sedan type is powered with a pair of eight-cylinder Van Blerck engines. All controls for the engines are carried forward so the owner may have the pleasure of driving*

The arrangement of the trunk cabin over the power plant permits of ample headroom in the engine compartment. This plan solves the great difficulty which has been experienced hitherto in providing accessibility to the engines while under way. A toilet and lavatory are forward of the main compartment, under the bridge, to which access is had through a door in the bulkhead. The finish and equipment is most elaborate and represents the most advanced practice in pleasure cruiser construction. The limousine top is upholstered in imported gray broadcloth and the side panels finished in silk velour. The interiors are of mahogany throughout, and all the deck fittings gold plated.



*This Sedan type can make 40 m.p.h., with complete comfort for her passengers. The enclosed day cabin is placed forward ahead of the noise of the engine*

# What Should a Small Cruiser Be?

The Possibilities in a Length of Twenty-five Feet—A Complete Design Drawn to Scale from Which Anyone Can Build

FOR the man with a "60-foot taste and a 25-foot pocket-book" the possibilities in a small cruiser are manifold. True, there are certain advantages which one may embody in a boat of the larger type, but taking it all in all, there is lots of room on a 25-footer for comfort and pleasure. There is room for movement, restricted somewhat perhaps, yet to no great extent, and finally, 25 feet of seaworthiness would be lots better than 60 feet of doubt.

Seaworthiness is then, after all, the quality desideratum, and if the plans shown herewith are followed faithfully a boat that will answer all reasonable demands may be constructed.

In considering the length of our craft we must bear in mind the fact that while a 25-footer might roll slightly more in a sea than the 60-footer, yet length, after all, is not the vital factor in seaworthiness, for if the boat is designed properly, the weights properly distributed and the boat tight and staunch she can ride the big ones with surprising ease and absolute safety.

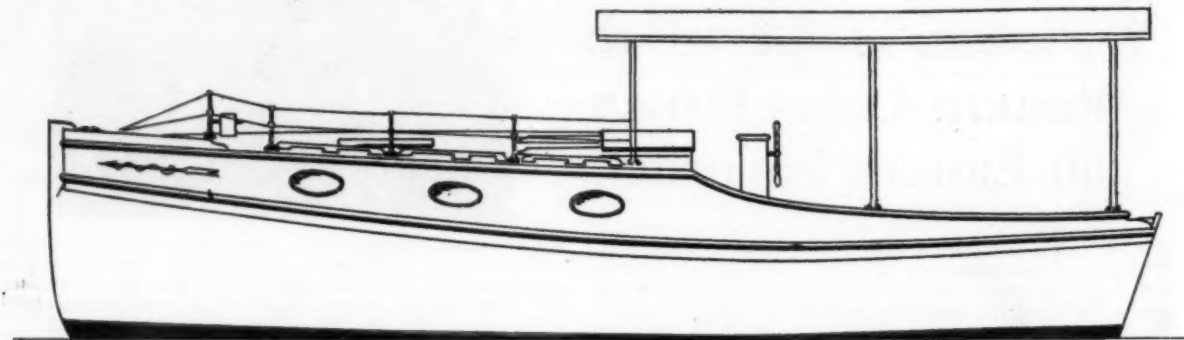
Having decided that our craft is to be designed to meet any emergency we next turn our attention to the not inconsiderable factor of comfort. Comfort and roominess are more or less synonymous in motor boats and so we must

provide for enough space unencumbered with the works of the beast to stand up, lay down and roll over in. It is all very well to have a boat in which it is safe to go to sea in, but unless one may keep more or less dry and warm the incentive will soon be lost and these factors must also be taken into consideration.

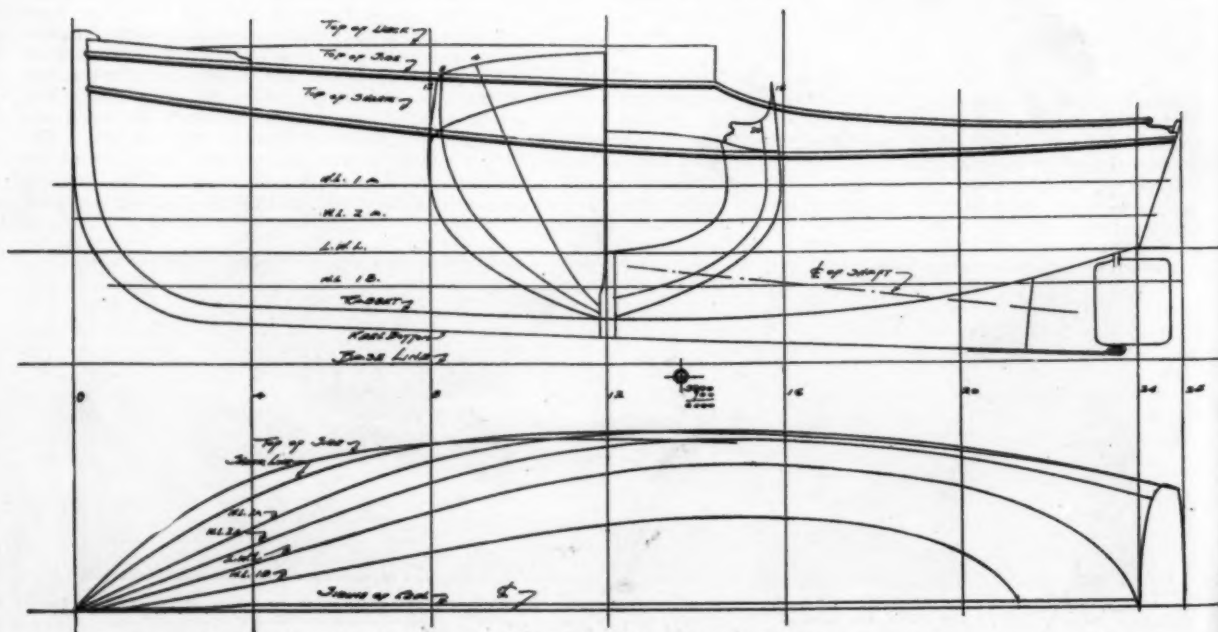
A cockpit of generous proportions is a prime essential, for in a 25-footer the officers, crew, and passengers, be "he" several or be "he" one, is going to spend much time on deck. Weight and beam, next to length, are the most prominent features of design in the small cruiser, and in order to secure the best results we must eliminate the idea of constructing a speed boat and content ourselves with jogging along at about an average gait of 8 m.p.h.

An 8-foot beam at the sheerline will give quite a bit of room inside, for the power plant of such a craft will naturally be small. This will give sufficient stability. This brings us to the consideration of weight, which in a 25-footer should not exceed 6,000 pounds. Heavy construction is not desirable in so small a craft, and we decide, therefore, to use ballast to secure the required stiffness.

One factor that is important in seaworthiness is an abundance of deadrise, which is better than the flat type of boat,



OUTBOARD PROFILE



Lines and outboard profile of a seaworthy and roomy twenty-five footer which will surely please any motor boatman



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and if the sections are so arranged, it permits laying the flooring lower and gives increased height to the cabin. In order to secure fairly easy bilges and at the same time a good bearing surface when the boat rolls down the point of greatest beam should be some distance above the waterline. At the waterline the beam should be narrow, which provides a tendency for an easy driving hull, but to avoid any possibility of topheaviness in appearance the topside should be well rolled-in. To prevent diving the forward sections should have ample flare and this will give increased roominess on deck, where it is sometimes important for the crew to be able to make a half-turn in dropping the anchor.

Reaching the stern, considerable deadrise should be in evidence, for while this form apparently settles more than the very flat sections while the craft is underway, it does not really settle and many a sleepless night has been produced by the hammering of a flat stern when the boat was anchored. For a transom, one that rakes aft is preferable, as it gives a better appearance to the boat, while a forward rake is not only unboatlike in appearance, but in the least bit of seaway has a penchant for picking up a sheet or two of water and dropping it in the cockpit on the unsuspecting but doubtless eloquently profane owner. A flat transom offers some advantages aside from the fact that it is quite inexpensive. If a slight difference in cost is a trifling matter, then a V-shaped transom will add much to the appearance of a boat of a little more than the average breadth.

A rather high freeboard is secured by carrying the sides up, and this has the added advantage of giving strength, but too much freeboard must be avoided as carefully as too little, for we then have a topheavy appearing craft, which is really as bad as it looks, and if the boat is too high sided forward it has a habit of "batting around" while at anchor. This tendency of running our sides up too high is often noticeable in the small boat where apparently it is the desire to secure as much headroom as possible in the cabin. If one-sixth the overall length of the boat is reckoned for freeboard forward we will produce a boat that in a blow, and under a slow bell, can be easily handled because of the small amount of surface presented to the wind.

In a 25-footer this height would amount to about 4 feet 3 inches, and while we might increase the height a trifle by placing the flooring low this is not always an advantage, for if the boat did happen to leak a bit the water in the bilge would come seeping through whenever the boat began to rock a trifle and as a consequence the cabin would take on the nature of an undrained trench.

A rudder of about one-fifth of the cross sectional area of the underwater body is about the right size, for a small boat needs a rudder larger in proportion than a boat with more size, and it is important that the rudder be sufficiently large and strong enough to give the necessary steerage in all sorts of weather. The garboard line should be well down, making the aft sections fairly deep and allowing for the placing of the motor as far aft as necessary. The shaftlog will thus be shortened, which is a material advantage if it is bored, which is the proper method for all small boats.

To secure the maximum amount of space inside of the cabin the sides should be carried clear up to the cabin top. It will strengthen both the cabin and the deck and give more deck room than any other method. It would simplify matters to make the coaming and cabin side all in one piece.

Simplicity of construction is desirable not only from a financial standpoint, but from one of practicability as well, and while all of the parts of the backbone, that is, the stem, keel, deadwood, and shaftlog should be substantial, and it would be advisable not to stint the use of lumber here, for it will give a substantial foundation, yet there should be no unnecessary timbering. Bending the frames and connecting them with heavy floors where they join the keel is desirable. If the so-called strip system of planking is to be used a soft wood should be selected, cut into strips about 2 inches wide and mill dressed. Spring these strips right into place and edge nail them into each other and it will be found that they will need only a bit of beveling and infrequent tapering. The strips will swell tightly into place without caulking and the sides will be not only stiff, but the bilge stringers and clamps will not be found necessary; there will be no waste of lumber as would be the case in wide planking and the outside appearance of the hull, with-

out the usual puttied seams, will be clear and smooth.

Proceeding with the exterior, and having arrived at the cockpit, it would be best to use a thick mixture of paint in filling the grooves if we use narrow strips of tongue and groove material for the decking. This is considered better by some than canvas, for it will not only please the eye, but will stand wear that canvas will not. For the cabin top, however, where the decking will not be subjected to much wear or strain canvas laid in paint is much better, for it will always keep tight and cannot possibly warp. Beams that are almost flat toward the center are best where the cabin top is to have a high crown with the crown being carried along the edges. You will find it much easier to maintain your equilibrium on a deck of this sort. Around near the edge battens should be securely nailed to hold the canvas down, and if this is carefully done the severest sort of gale should not rip your cabin top off.

That important part of the boat that at once spells control, operation, and comfort, the cockpit, should be as roomy and as comfortable as possible, but a length of 8 feet is, unfortunately, all that can be given to it in our 25-footer, but if we eliminate seats and use deck chairs it will be found a more agreeable place. To afford protection from the rain and sun a permanent canopy is a necessity. Since a top alone will not afford the necessary protection side curtains should also be provided. Those of the heavy canvas type with openings of celluloid are best. A folding windshield to be hitched up under the top out of the way when not in use is to be forward of the cockpit. This will be of glass with a wood sash. The supports for the canopy of the cockpit are to be one-piece stanchions bent to suit.

For ventilation, hatches that are placed more toward the sides than along the centerline will be cut. They are not to be placed away from the centerline with the idea that they will give better ventilation there, but because with the center of the deck clear it can be put to better use. Square hatch coamings and hinged hatches attached to a small sub-coaming, with a piece of canvas considerably wider than the hatch proper, will prevent a beating rain from driving through.

The deck of the cockpit should be several inches above the waterline when the boat is at rest and provided with scuppers to carry off the water. Changing conditions cause small cruisers to alter trim from time to time and it is not desirable to have water standing around in corners. Swabbing is going to be necessary, and in order that the water will not run into the cabin, door sills about 4 inches higher than the deck of the cockpit would afford the necessary protection and prevent water getting into the cabin. In the extreme after part of the boat should be a small hatch to enable you to make repairs on the steering gear should that be necessary, and with an emergency tiller you may feel safe as long as the rudder has not been completely smashed.

And now for the propulsion of our craft. Let us start at the bottom, i. e., the engine bed, and work up. First of all, let us provide a bed longer than the engine frame, use heavy floors under the engine, bolt them securely to the keel and have them extend up to such height as the flooring will allow. The engine should not under any circumstances be on the bottom of the boat, and the one important thing to remember is that too much time, too much thought, too much labor and too much material cannot be used in this work. A good, solid bed will eliminate vibration to a considerable extent. Halving the engine bearers down into the floors, where they should be strongly bolted, would help considerably. Further strength will be given your engine bed if, after allowing sufficient space under the motor and a pool for the collection of grease, you cement between the floors. There will then be no space for water to stand and add to the general odor and to slop around when the boat pitches and rolls. The motor room is partitioned off by a bulkhead that extends to the top of the cabin, but a panel that can be removed without jamming is necessary in order that access may be afforded to all parts of the engine quickly. If the forward partition is arranged to be swung back so that the motor may be reached from that point also, it will be an ideal plan, even though this partition would not ordinarily be in the way when starting the motor. Place the coils on the bulkhead and use secondary wires 15 inches in length. Place the spark and throttle controls on the wheelbox on

(Continued on page 94)

# Coeur d'Alene Regatta

Vogler Boy III Ran Away from Competitors in Western Classic with a Speed of 48 M. P. H.

By C. D. Hudson

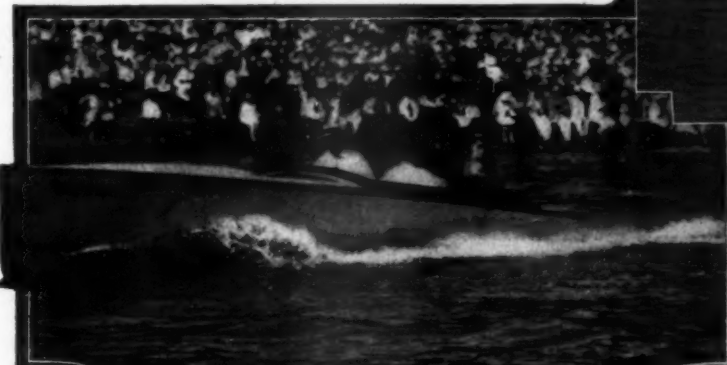
THE 1919 regatta on Coeur d'Alene Lake, Idaho, held July 4 and 5, will be remembered by 25,000 water fans of the inland country of the Pacific northwest for one thing above all others, for motor boat speed.

They saw a motor-driven craft skim the water at 48 miles an hour and they are talking about it yet; and are going to be back next season with a demand for something that will churn the surface at 58 miles.

Vogler Boy III, owned by F. Wm. and F. D. Vogler, of Portland, was the good boat that wrote the word speed on Coeur d'Alene Lake. The little fool was so speedy that the judges did not have the heart to put it against local boats on any basis but a two-to-one handicap. It carries an eight-cylinder, four-cycle Sterling, with 6½-inch bore, 7-inch stroke, and rated at 250 h.p. Imagine this power plant in a 20-foot step hydroplane and you have Vogler Boy III. The boat ran like a wild water bug. On a straight-



Swastika is one of the faster pleasure run-about on Coeur d'Alene Lake. It failed, however, to win a trophy this year for its owners, Peyton Brothers, of Spokane



Imperator has been a winner in every Coeur d'Alene regatta for the last five years, but was outclassed this year



Vogler Boy III, owned by A. F. Vogler, of Portland, hit a speed of 42 to 46 miles an hour consistently in its exhibitions. The boat was not permitted to enter the races as a contestant



away it looked like a chute-the-chutes sled gone amuck, and on the turns like a Spad looping the loop.

Of the Coeur d'Alene Lake boats, Tipperary, owned by Ramsey Walker, of Wallace, Idaho, was easily the leader. Its admirers claim for it a speed of 40 miles an hour. The boat has an engine having four cylinders of 5½-inch bore, 6-inch stroke and rated at 60 h.p. In the regatta derby Tipperary put up the gamiest finish of the 2-day program when it nosed Thoroughbred out of a good chance to win the most coveted water trophy of the lake.

Thoroughbred was built this season and is owned by Lieut. Paul Caesar, of Fort Wright, Spokane. It is equipped with a 26-38 h.p. Red Wing engine, 4 1/16-inch bore and 5-inch stroke.

Imperator, owned by F. E. Marler, of Colfax, Wash., was as consistent a winner as in former regattas, taking the 8-mile handicap and placing second in the Idaho cup race. It carries a Model F four-cylinder Red Wing power plant, 4 1/16-inch bore and 5-inch stroke.

Virginia Rush, of Spokane, driving her father's boat, Ginger, won the Spokane cup from her male contenders, arriving

(Right) Tipperary is the fastest Coeur d'Alene Lake craft. The boat is credited with a speed of 40 miles an hour

(Continued on page 78)



# A Hand-Some Craft

During the War it Was a Popular Pastime to Fish for Mines—In the Piping Days of Peace Whistler Is to Fish for Swords—of the Fish Variety

FROM the yards of Hogdon Bros., at East Boothbay, Me., there has just been delivered at New Bedford, Mass., a handsome little ship for that master designer of yachts, Wm. H. Hand. She is a ship in every sense of the word, since she embodies the qualities of seaworthiness of her bigger sisters, for Whistler, which is the name Mr. Hand has christened her, is but 61 feet overall, 45 feet 6 inches waterline, 15 feet 6 inches extreme beam, and 7 feet 6½ inches extreme draft. She is a typical Gloucester fisherman in type and is to be used by Mr. Hand in sword-fishing expeditions.

When Mr. Hand disposed of his schooner Andiamo some time ago, he decided on a craft to replace this well-known boat, and from his fertile brain evolved Whistler, a craft with a high bulwark rail and with very low, narrow trunks over the main cabin and engine-room, their chief use being for ventilation and light. Whistler does not boast a cockpit and is a flush-deck type of two-masted schooner, her four lower sails containing some 1,622 square feet, and the rig is very snug and compact. Heavy oak construction is intended to make her stand up against almost anything that the seas may bring forth; her frames are spaced 12 inches on the centers and are of white oak, double molded and cut to form. For planking 2-inch Georgia pine is used, while she is decked with 2-inch white pine.

Of her 41 tons displacement about 18 tons will be ballast. She is expected to do 7½ knots under power and may do 8 knots or better, as she will be equipped with a Model F, heavy-duty, four-cylinder Sterling motor, which will be installed to drive a 28-inch diameter by 20-inch pitch two-blade Hyde propeller at about 750 to 800 r.p.m., maximum. All metal work is of bronze, including the shaft, stuffing box, outboard stern bearing, rudder stock and all submerged metal work as well as that above water. Practically all of her fittings will be of special design and she will be lighted throughout by electricity.

Unusual features are embodied in her cabin, where, starting with the forecabin, there is a berth with full headroom, followed by a galley extending the full width of the hull and about 5 feet long, fore and aft. The equipment here will be quite complete with a four-hole 8-inch coal range, a place for an alcohol stove, an ice chest with space provided for 250 pounds of ice, sink, dressers, dish racks, lockers, etc. Just aft of the galley is the main cabin, where Mr. Hand has achieved quite a feat in arranging his berths so that spring beds with a wide floor space may be used. These berths when not in use are covered by transom backboards

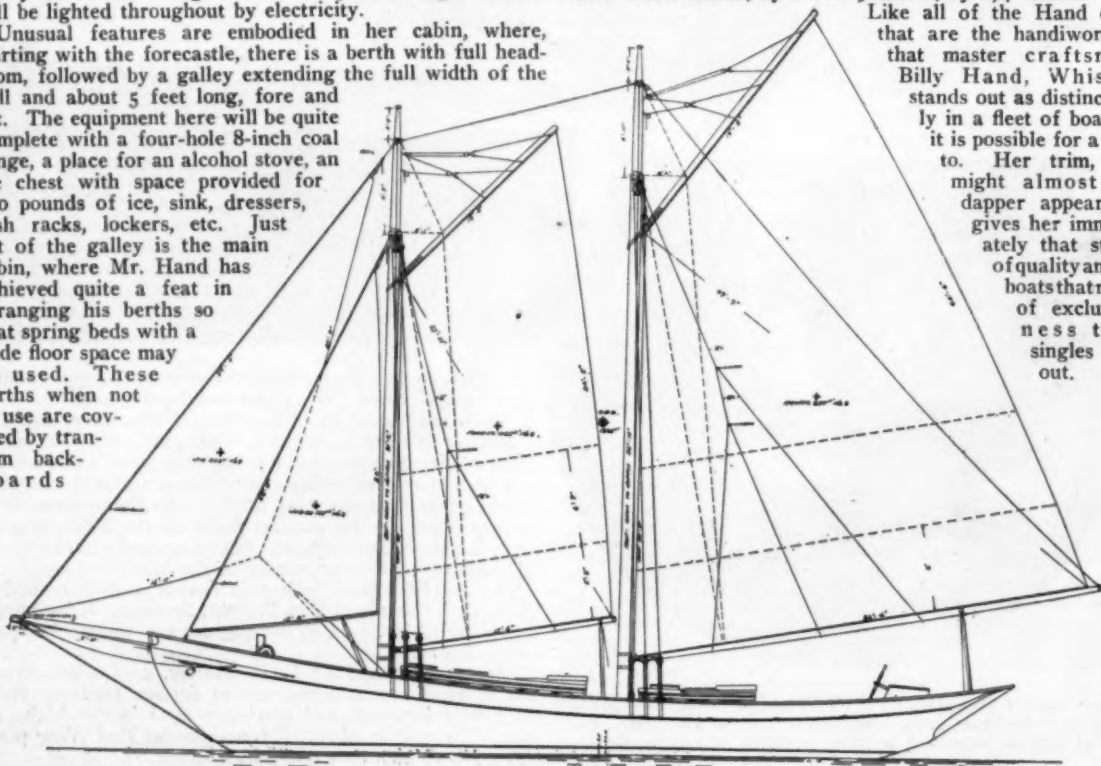
and stow flat against the side of the boat. When in use, the backboards fold down, the curtains separate and the berths are laid on the tip-down backboard as a foundation. Two people may sleep on each side of the transoms below without placing one bed directly over the other, and both have wide comfortable spring beds, these transoms being of the spring cushion type.

On the starboard side of the cabin at the after end is a couch with a bin underneath for the stowage of baggage, while a large toilet with a fixed lavatory is on the port side. Behind the cabin is the motor room, extending the full beam of the craft, and here are two more extra large pipe berths. A companionway leads directly to the engine-room and another to the main cabin. Full headroom is provided in the toilet under the bridge deck amidships. This bridge deck is used to give deck space and adds materially to the strength of the hull by giving direct ties from side to side at the mainmast.

As Whistler is primarily designed by Mr. Hand for his sword-fishing trips, he has provided a fish well to keep his fish alive, just aft of the motor room. The top of this is flush with the deck, and when not open it is quite inconspicuous. Under the main cabin floor is a tank with a capacity for 200 gallons of fresh water, while the gasoline is carried in two cylindrical tanks under the motor room, each with a capacity for 180 gallons.

One of the unusually interesting, if minor features, is the cabin table, which is of mahogany, built principally of Haskelite 3-ply veneer, and when extended measures 2 feet 6 inches by 5 feet 8 inches. It is arranged so that seven persons may sit around it in comfort, those on the port side using chairs, while those on the starboard side sit on the transoms. When not in use the table may be stowed against the forward cabin bulkhead, occupying only a space of 2 feet 6 inches, by 2 feet 9 inches, by 2¼ inches.

Like all of the Hand craft that are the handiwork of that master craftsman, Billy Hand, Whistler stands out as distinctively in a fleet of boats as it is possible for a boat to. Her trim, one might almost say dapper appearance gives her immediately that stamp of quality among boats that mark of exclusiveness that singles her out.



Whistler is 61 feet overall, 45 feet 6 inches waterline, 15 feet 6 inches extreme beam and 7 feet 6½ inches extreme draft. She was designed by Wm. H. Hand, Jr., N. A. for sword fishing

# Put-Put-On Your Boating Togs Chugs the Motor to the Miss; We Will Cruise Through Sun or Fogs, Upon a Sea of Bliss

Not the least effective of two of the new season's fashions are these costumes: The girl standing is wearing a sport coat of brushed wool; trimmed checked scarf fringe; violet velvet tam-o-shanter, with tucked white cotton gabardine skirt. The girl in the chair has on a polo coat of camel's-hair cloth and a sennet straw sailor. White silk stockings and low white shoes complete the picture. From design by Franklin Simon & Co.



Coat of suede leather, in all the leading colors. Its simple design gives it that feminine grace and allure of the open. Design by Bonwit-Teller & Co.



Top coat of Wul-Buk— an exclusively new sporting fabric; light in weight, yet it is warm for a chilly evening on the water. Can be had in all the favored shades. Design by Bonwit-Teller & Co.



Two of the niftiest of the newest boating clothes are these. The girl on the left is wearing an autoaire cape, white taffeta hat trimmed with navy blue and white chiffon veil. The other costume is a white linen suit tailored, with a pink felt rolled brim sailor hat. From designs by Franklin Simon & Co.



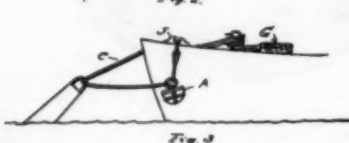
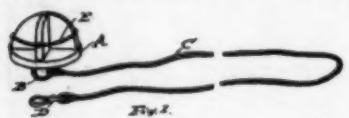
# Helpful Hints for the Motor Boatman

## A Mooring Buoy Wrinkle

The trick of picking up a mooring buoy with a boat hook is not always successful at the first attempt, especially if the boat has a little more headway than was thought. The little device shown in the accompanying sketch renders this operation much easier and more certain. It consists of a wooden float A, Fig. 1, having a ring B attached to the underside, to which is attached a piece of light rope C of, say, 1/4-inch diameter, and about 12 or 14 feet long. To the end of the rope is fastened a fairly heavy snap hook D. The float should be made somewhat as

*It is MoToR BOATING's purpose to publish from time to time under this heading such methods and kinks as motor boatmen have found helpful to them in their enjoyment of the best of all sports. The subjects will not be restricted to any particular phase of boating but will be as varied as we, with the help of our readers, can make them. To help make this page a success we want our readers to send us short accounts of the little things that have helped them out of their difficulties or stopped the little annoyances that seem bound to occur every so often.*

—EDITOR.



A home-made mooring pick-up buoy that presents a number of novel features

shown, in order that it may show well on top of the water. It may be made of some light wood, such as white pine or white cedar, about 3/8-inch thick; and the circular bottom piece is about 12 inches in diameter. Around the upstanding pieces is fastened a ring of rope E.

When the boat is about to leave its mooring, the regular mooring line G, Fig. 2, (which should be in the form of a loop through the mooring ring, with its two ends fastened on deck) is unfasted from the boat at one end, and the snap hook D attached to such end. With the float A still retained on the boat, the mooring line is hauled aboard, thus pulling the rope C through the mooring ring H. As soon as the snap hook D has been pulled back onto the boat again, it is unfasted from the mooring line (which is now entirely on the boat), and snapped onto ring B. All this

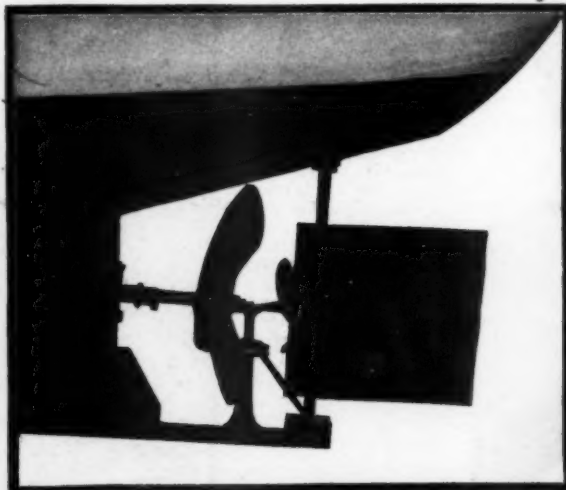
may be done before the engine is started, the boat being still fastened to the mooring buoy by the rope C, the float line C being hung over the bow of the boat, through the chocks, J, Fig. 3, thus temporarily securing the boat to the mooring. When ready to slip the mooring, the float A and line C are simply dropped overboard, as in Fig. 4.

When picking up the mooring again, the float A can easily be picked up with a boat hook, either by the rope E or the rope C. It is pulled aboard and (Continued on page 58)

## Straightening a Bent Shaft

Very often when the propeller hits driftwood or other obstruction the shaft is bent slightly at the stern bearing, especially where there is a considerable length of shaft between the bearing and propeller. Such a bend can easily be straightened by the following method:

The tang of a file or other pointed piece of metal is secured to the rudder by means of a clamp in such a position that the point is half-way between the two positions of the center of the shaft when the bend is up and then down. It will then be on the center line of the shaft when straight.

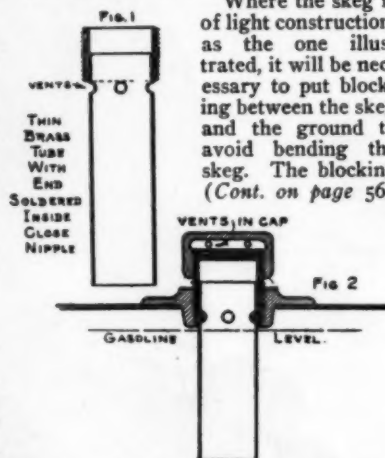


A simple method of straightening a shaft bent at the stuffing box is to use an automobile jack

Turn the shaft until the bend is down, then with a small screw jack bearing against the skeg jack up against the shaft until the center is slightly above the pointer. Two or three sharp blows with a hammer on the shaft near the stern bearing will help to straighten it. When the jack is lowered it will be found that the shaft will spring back to some extent.

Repeat the operation of jacking up the shaft and hammering it until the center is approximately opposite the pointer, then remove the jack and turn the shaft. If there is still a slight bend, jack the shaft up again and repeat the operation until it is straight.

Where the skeg is of light construction, as the one illustrated, it will be necessary to put blocking between the skeg and the ground to avoid bending the skeg. The blocking (Cont. on page 56)



A simple device that will prevent splashing of the gasoline when filling the tank

## Anti-Splash Device for the Tank

When preparing for a cruise the careful owner will want to fill his fuel tank to full capacity. But as the filling is in process and the level of the gasoline approaches the top of the tank every motion of the boat causes a wave of gasoline to slap along the top of the inside of the tank and spatter and splash out of the filling hole. Even with the plug in place the gas will spurt out of the vents. This wastage when in rough water may be great enough to cause a disastrous fire.

The desire to fill his tank to the last drop and yet live up to the motto, Safety First, caused the writer to evolve the anti-splash device here described and pictured.

A brass close nipple of the proper size to fit the filling hole was obtained. A tube 4 inches long and the proper diameter to fit tightly in the nipple was made from a piece of sheet brass and this tube was soldered into the nipple, as shown in Fig. 1. The four (Continued on page 56)



# SMALL MOTOR BOATS

## Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for October Prize Contest

1. Suggest merits or demerits of keeping a boat in the water all winter instead of hauling out.

(Suggested by E. M. D., Chicago, Ill.)

2. Describe and illustrate what you believe is the most important change, addition or improvement you have made on your craft this season, giving your reasons for making them.

(Suggested by C. E. B., Fall River, Mass.)

3. Give some figures as to the cost of operating a particular type of motor boat including storage and general upkeep so that one not familiar with the sport can determine what he must expect to pay.

(Suggested by A. B., Roanoke, Va.)

### Rules for the Prize Contest

ANSWERS to the above questions for the October issue addressed to the Editor of *MoToR BoAtInG*, 119 West 40 St., New York, must be (a) in our hands on or before August 25; (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before August 25. The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions below, any article or articles sold by an advertiser advertising in the current issue of *MoToR BoAtInG* of which the advertised prize does not exceed \$25, or a credit of \$25 on any article which sells for more

than that amount. There are three prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer all.

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of *MoToR BoAtInG*, of which the advertised prize does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

## Can You Make a Two-Cycle Motor Always Start?

Answers to the Following Prize Question Published in the June Issue

"Discuss the starting of two-cycle marine motors, describing why it is that some motors are much harder to start than others, although there is apparently nothing wrong with compression, spark, etc. Give any hints you know of which are helpful in starting balky two-cycle motors."

### Be Sure There Is Sufficient Current

The Prize-Winning Answer

GIVEN an explosive mixture of gasoline and air and a spark to fire it, any motor will start and continue to operate provided there is a means of continually supplying the mixture and the spark. It is doubtful if there is one motor manufactured in late years so poorly designed and constructed that it will not start and run, but the motor is yet to be built that will not at some time or other develop some kind of trouble, either in starting or while operating.

When your motor don't start as readily as you think it should, don't blame the motor. The trouble is very likely due to faulty or imperfect ignition or carburetion or lubrication. A good mixture will not fire without a spark and the hottest spark will not explode compressed air. Lubrication plays an important part in keeping the piston rings and crankshaft main bearings in a gas-tight condition.

Two-cycle motors may develop starting troubles that never appear in the four-cycle type, while the two-port and three-port types are subject to troubles all their own. Defective ignition is generally the cause of a motor refusing to start and the ignition should receive first attention. Be assured that there is current to produce the spark and that the spark is properly timed. Batteries get weak and timers are often allowed to become fouled with old grease and oil so as to prevent proper contact. A weak battery will often jump a spark across the spark plug gap 1/32-inch in the air, but when under compression the spark does not occur. Broken or short circuited wiring or plugs and improperly adjusted or stuck spark coil contacts will prevent the occurrence of the spark even with a strong battery.

The repeated making and breaking of the current at the vibrator points causes the removal of some of the metal from one of the points and deposits it on the other until the points become so pitted that they stick together. When this condition is found it becomes necessary to remove the spring and upper contact point and file them down until they make a flat, even contact all across their surface. Occasionally a vibrator spring loses its tension, which must be restored by bending the spring evenly throughout its length.

A piece of fine sandpaper or emery cloth drawn between the contacts may temporarily restore the operation, but it

will not remain so for long. Being satisfied that the ignition is in good working order, turn your attention to the carburetion.

The mixture may be too rich or too lean. The former may result in a flooded motor and when in this condition the excess gasoline in the crankcase must be worked out by considerable cranking, or drawn off through the drain cocks in the base.

Before attempting to clear out a flooded motor close the needle valve and open the throttle, also the petcocks. When the motor does not start readily after priming, flooding may be suspected and is more likely to occur in two-port than in three-port motors, and much more likely in motors equipped with vaporizers.

In the three-port type this is not dangerous, but in this that the mixture is too lean. In this case the mixture is slow burning and the incoming gas is ignited by the flame remaining in the cylinder, which travels to the crankcase, causing crankcase explosions.

In the three-port type this is not dangerous, but in this two-port motor the check valve prevents the pressure from blowing back through the carburetor and serious damage may result.

The above applies to motors in good condition which should start readily on priming. It is the old or much worn motor that requires special treatment or stunts to get it started. Here lack of compression in either the cylinder or crankcase is the main cause of hard starting. Leaky rings causing poor compression may be temporarily remedied by pouring about a tablespoonful of cylinder oil into each cylinder and turning the motor over a couple of times to work the oil around the rings. This will hold up the compression until the motor is started, when the speed will prevent serious leakage.

Worn crankshaft bearings may allow the escape of so much crankcase compression as to prevent the proper transfer of the mixture. Aside from new bearings, about the only remedy for this trouble is heavy grease and lots of it. The grease will fill up the space around the shaft, thus helping the compression.

Water in the cylinder may prevent starting. The water may get in through the exhaust or a leaky gasket or a

cylinder may be cracked. Water in the cylinder may be detected by removing the spark plug from the after cylinder. Drops of water will be found on the plug if there is any in the cylinder. By leaving the spark plug out for a few minutes the heat from a hot motor should rapidly evaporate the water, or additional heat may be supplied by keeping the plug out and priming the cylinders with gasoline or alcohol and igniting it with a match or a spark from the plug.

Starting a motor in cold weather is a much harder proposition than on a hot summer day, owing to the cold condition of the motor and the air preventing the gasoline from vaporizing readily. Priming with high test gasoline or a fifty-fifty mixture of sulphurous ether and gasoline will usually do the trick. Pouring hot water through the water jacket and wrapping the carburetor and intake manifold with hot cloths will facilitate starting.

Faulty installation and alignment, causing undue friction, may prevent a small motor from picking up enough speed to complete the next cycle.

Friction due to tight bearings or a dragging reverse band will cause the same symptoms. As a last resort remove the bolts from the motor flange to determine whether or not external friction is the cause.

A gasoline motor does not contain life; therefore, cannot become balky. It will run with proper adjustment and it is up to you to furnish the brains. Use your head and don't cuss unnecessarily and you can start any motor made that ever has run and is not wrecked.

W. B. M., Newburg, N. Y.

### *Worn Bearings a Frequent Cause of Trouble*

**T**HE two-cycle motor is, in many ways, quite a different animal from the four-cycle type. In the first place, they run equally well in either direction, and, in the second place, they have an impulse or power stroke every revolution of the flywheel. This makes it necessary to utilize both the top and bottom sides of the pistons. The gas is drawn in underneath the piston, is partly compressed in the crankcase and then flows to the cylinder and, when still further compressed, is fired.

This makes it necessary to have very tight gaskets on both the intake manifolds and between the sub-base and upper part of the crankcase. If these are not gas-tight, air will be drawn in and starting made difficult. Of course, the same holds true for the gasket between the cylinder block and cylinder head. Excellent gaskets can be made of heavy brown paper well coated with shellac. Several thicknesses are necessary. Drain cocks in the sub-base should also be tightly closed.

I have seen two-cycle engines act very balky for apparently no reason at all, and then discovered that every time the piston descended bubbles were forced up through the oil in the sight feed oilers on the main bearings. This was caused by worn bearings allowing the gas under compression in the base to leak out along the bearing and up into the oil cup.

As a rule the spark must be retarded well behind dead center before cranking, or a bad kick-back may result. A balky engine may, however, be started in the following method, which is particularly useful with heavy types. Turn off the ignition switch. Open throttle wide. Turn the engine over three or four times, then grasp the flywheel rim with both hands and rock it back and forth several times. At least one piston should be in such a position as to first uncover the inlet port and then uncover the ports between the crankcase and the cylinder each complete rock. This fills all recesses with gas. Then advance the spark to within about 5 degrees of top center, so as to cause rotation in the proper direction. Turn on ignition and give the flywheel a quick jerk against compression in the direction opposite to which the engine should rotate. I have found this method very successful and avoids a lot of back-breaking cranking. Of course there is a vigorous kick-back when the charge is fired and care should be taken to let go of the flywheel rim before the spark has occurred.

Back pressure from the underwater exhaust should be avoided, as most two-cycle motors exhaust the burned gases

for only a part of the upstroke of the piston and depend partly on the incoming new gas to scavenge the cylinder of the old gas before the exhaust port is closed.

Priming the cylinder with gasoline and then leaving the pet cock open while the flywheel is rocked back and forth through a few degrees, and then closing the pet cock and cranking as usual, has also helped me on occasions considerably.

S. R. D., Brooklyn, N. Y.

### *Map Out a System to Follow*

**A** DISCUSSION of the starting of a two-cycle motor when the compression, spark, etc., are really in good condition seems futile, for when these three are in running order (the etc. supposedly meaning carburetion) any motor will run, if it is cranked over a few times, be it a two-cycle or a four.

Theoretically and practically true as this is, yet our experts and novices alike spend many a weary hour swearing and perspiring over the starting of motors.

It has been the writer's fortune (or misfortune) to start, among others, some 400 or 500 two-cycle, three-port motors during the last few months, and the following system or course of procedure, which may be of some assistance to W. H. P., of Port Elgin, N. B., or other motor boat brethren, has been followed with success, inasmuch as all of the motors have started.

First: Do not take any other person's word for anything without making sure they are right.

Second: See that there is a flow of clean gasoline at the carburetor, with proper adjustment on the needle valve and auxiliary air valve.

Third: Examine spark timing at one of the cylinders, preferably number one (next to flywheel).

Fourth: Test the compression on each cylinder by turning motor over slowly with the priming cock closed on the cylinder under test until about top (explosion) center is reached, then open priming cock immediately. If a shrill whistling sound occurs, that cylinder has enough compression to operate.

These three items—carburetion, ignition, and compression—form the trinity which make any gasoline motor "put-put." There are "fifty-seven" or more possibilities for trouble in any one of the three, and a discussion on which is the most important one of the three should prove interesting. As to the writer's idea on this, a quotation from Finlay Peter Dunne will suffice, "I dunno."

Regarding kinks helpful in starting two-cycle motors, the best one known is the U. S. Navy stunt used on the motor sailing launch engines of winding a small rope several times around the flywheel. By giving a quick, snappy pull on the free end a motor can be turned over rapidly several times, which will oftentimes start a motor when the crank will not.

The navy has thousands of these work boats in daily use and, with the exception of the single-cylinder motors, the gobs always start them with a rope.

Another little matter, which is fairly well known, but worth mentioning—Care in priming with gasoline—be sure that there is not too much. Too much priming makes an excessively rich mixture which is hard to ignite. Also too much priming will wash the oil from the rings and walls of the cylinder, making the motor stiff. To rectify such a condition, turn the motor over several times with the priming cups open, then prime with a small amount of oil.

Recessed spark plugs that are over one-half inch away from the bore of the cylinder are surrounded with foul, half-burnt gas mixture, and make for a balky motor. Get a longer barrel plug.

Each two-cycle cylinder should have an independent carburetor, and the base of each should have a drain cock.

There are so many possibilities for trouble in any gasoline motor that it seems a miracle, when we know how much work they perform, that they ever got by, yet they are the most useful and interesting little cusses, and if we remember to thoroughly investigate the compression, ignition, and carburetion we can keep them running.

H. R. K., Norfolk, Va.

# Tenders That Are Not Tender

Answers to the Following Prize Question Published in the June Issue

"Describe and illustrate a most practical flat-bottom tender not over 12 feet in length for use with or without an outboard motor."

## An Outboard Motor Dinghy the Result of Experimentation

The Prize-Winning Answer

THE compactness and reliability of the outboard type of motor has given rise to a great number of boats, some of which are fitted for such installations, but the majority of which are poorly adapted to an outboard power plant. In the first place, a boat should be shaped differently when she is to be used continuously with one of these little engines. The after sections must be very full, as not only the weight of the engine must be carried, but when one man is aboard he must also be aft in order to take care of the motor.

The boat shown in these plans is the result of experimentation of several years, both in her shape and in the construction. I have tried to make the construction just as simple as possible, and yet get a boat that will hold together even if she is jerked along through a heavy sea and gets banged against docks and floats. I made her lapped strike on the sides, as that is the only construction that will stand up under the continuous drying out and swelling that a boat gets when she is hauled out on floats or the deck of the cruiser. The gunwhale construction is open, so that when the boat is turned on her side the bilge water and also the dirt will run out and not collect in the corner under the clamp, to run back as soon as the boat is put right side up again. The transom is well braced to withstand the weight and vibration of the engine and the stern seat is arranged so that the operator can be comfortable in all of the positions that he must occupy when working at the machine.

The sides are flared out for the entire distance fore and aft to keep the boat dry in a chop, and there is very little rocker to the bottom planking, making it easier to build and

also keeping the boat from pointing her nose skyward when driven with the weight aft. The outer keel is removable and can thus be renewed when the constant dragging over the edge of the float or the beach has ragged it out. As the outboard motor will be left ashore at times and the boat will have to be rowed, I have provided a pair of rowlocks well aft, so that the weight of the rower will still keep the boat on an even keel in spite of the increased buoyancy aft. There is also another set of rowlocks in the usual position amidships. Out toward the sides on the bottom planks I have provided rubbing strips, so that they and the removable keel can take all the hard scraping and leave the planking in the best of shape year after year.

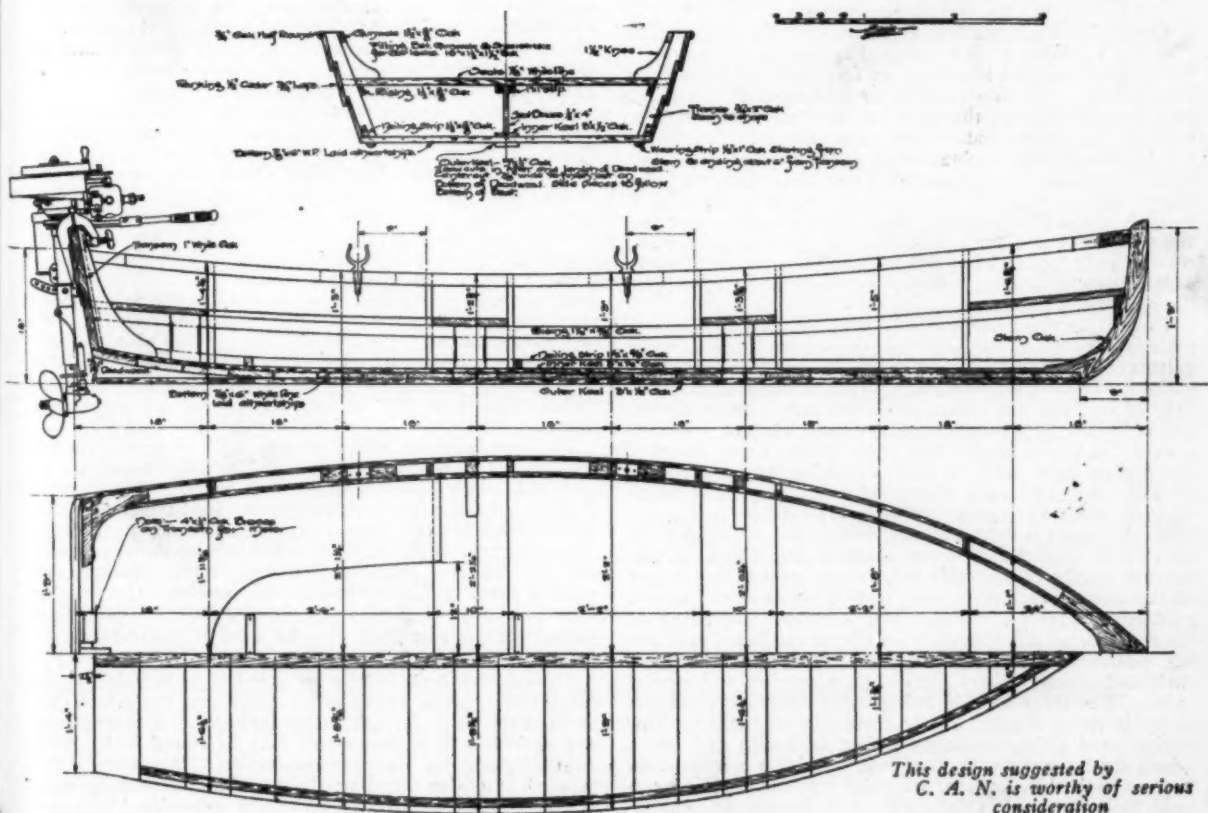
C. A. N., New York.

## A Full Bow and Plenty of Freeboard

THE second question of the June issue calls for a flat-bottom rowboat of 12 feet or less in length, doubly suitable for rowing and for use with an outboard motor. By a flat-bottom we mean that the keel rabbet is level with the chines, or, in other words, the bottom is flat from chine to chine, without V or curvature. Other considerations that should be mentioned are cost, ease of construction, light weight without sacrificing strength and ruggedness, stability and carrying capacity, good towing properties, ease of beaching, and, last but not least, appearance.

The 12-footer, of which complete plans are shown, meets these requirements very well. Since the boat is not primarily a tender, the maximum length of 12 feet was used, with a beam of 4 feet. These are about the proper dimensions for general utility.

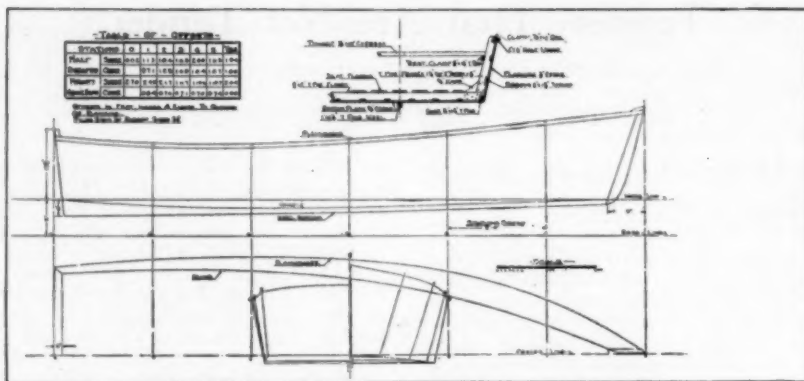
A boat for an outboard motor must be broad and flat aft,



This design suggested by C. A. N. is worthy of serious consideration



If the boat is to tow well the bow should be full. A very sharp-nosed boat will shear from side to side, try to run ahead, and perform most radically in a following sea. In the present design a happy medium for all three purposes was used. Those of us who have towed through with and without skegs know what wonders this little piece of wood



*P. L. R. gives full information for building a 12-foot dinghy*

The type section shows well the construction and scantlings. The transom should be of 1 3/4-inch yellow pine or oak, thoroughly kneed and braced to avoid vibration. With this construction the boat will be very tight, durable, and light, and yet not hard to build. It will keep pace with any of them in speed, either powered or rowed.

P. L. R.,  
Lorain, O.

## Interior Arrangement Possibilities in a 40-Footer

**Answers to the Following Prize Question Published in the June Issue**

*"Suggest the most desirable interior arrangement plan for a 40-foot cruiser, using diagrams if necessary."*

## *Ideal Cruising Accommodations for Four in a 40-Footer*

### The Prize-Winning Answer

To analyze the accommodations of the design, the fore peak is devoted to cable storage above, and below it the galvanized fresh water tank, which should hold about 50 gallons. This forward space is 4 feet in length and is partitioned off from the toilet, which occupies 3 feet next aft and is lighted by a 6-inch port on either side and a 20-inch square hatch overhead. The usual fixtures are provided and a door opens into the main cabin, at the forward end of which are two open wardrobes with much full-length hanging space and occupying 18 inches between partitions. The cabin itself is light and airy, with a 3- x 4-foot skylight above and four 7-inch screw ports in the sides. Broad transom berths comfortably upholstered extend full length of the 6-foot 6-inch apartment, and at the after end partial partitions separate it from the engine-room. The galley on the port side of this room has a white enamelled sink draining outboard, a "New Perfection" yacht stove, cooking shelf and roomy lockers for dishes, groceries, and canned stores. The large built-in refrigerator occupies the corner to starboard at the foot of the companionway stairs. This engine-room galley measures 5 feet in length and has a 5-inch cowl ventilator in the deck, besides a 7-inch screw port on each side, together with the companion slide overhead, to insure ample ventilation. This location is emphati-

The midship deck will be protected on either side by the continuation of the boat's raised freeboard, the 2-foot curb or bulwark thus formed being topped by a strong pipe rail 14 inches in height, which may be closed in by khaki weather cloths for maximum protection. The effect of this bulwark is to give a feeling of protection and security equal to that obtained in a cockpit and much appreciated by guests

of the fair sex, but usually entirely lacking in small flush-decked craft.

The self-bailing feature functions without pipe scuppers, excess water draining off aft instantly. This is at once quicker and safer than the usual lead pipe scuppers as fitted in the corners of a self-bailing cockpit. The steering position is amidships, where greatest navigating efficiency is assured.

The after cabin is very light and comfortable, with three 7-inch screw posts on either side and the companionway at the forward end. Two broad-cushioned transoms give comfortable sleeping accommodations for two. A toilet is located to port at the foot of the stairs, while a roomy clothes locker affording full-height hanging space is in a corresponding position to starboard. Two more lockers occupy the after corners of the cabin.

The foregoing plans provide ideal cruising accommodations for two couples or four fellows on long trips. Of course, additional sleeping quarters might be arranged, using pullman or pipe berths rigged above the transoms if a large party were to be cared for over night. It would seem that all the essentials are included, most of the features having stood the test of service in other boats, and while I have never seen the enclosed midship deck idea worked out, there seems to be no reason why it should not be entirely practical.

A. O. G., Portland, Me.

## A 40-Footer with More Room Than the Average 50-Footer

THE following data is descriptive of my 40-foot boat which is now in use. This craft is 39 feet 11 inches long, and has a beam of 10 feet 7 inches. At the time of purchase she was of the bridge-deck type, but I enclosed same, making a pilot house 7 feet 1½ inches wide and 9 feet long. Across the after end is an 18-inch seat, the full width, and where the house goes over the raised deck forward this also makes a seat for about four persons. We also have two deck chairs in this house. Under the floor is located the 40-50 h.p. engine, with all controls centered in the pilot house.

There are two lockers in the engine-room, each having in them a 40-gallon fresh water tank, one for the toilet room

and the other for the galley. There are also two gasoline tanks, one on each side of the engine aft, holding 60 gallons each. These tanks are filled through the pilot house floor.

The dynamo is fitted over the engine, run by belt, and charges battery which is located under the seat in the pilot house. The switchboard is located also in the pilot house on the after bulkhead.

The stateroom is located forward and is entered from the pilot house by a pair of steps and has two berths, each 7 feet long and 2 feet 6 inches wide. Two large drawers are fitted under these berths. Forward of this stateroom is a toilet room 3½ feet long.

The main cabin is entered from the after end by steps from the deck. This cabin has an 18-inch deck on both sides, so that you can get to the pilot house, front stateroom, and toilet room. This cabin is 14 feet long and full width of the boat. The cabin is laid off as follows:

On the starboard side forward, a 2-burner kerosene stove set in a galvanized iron-lined pan, with sides also lined, having a drain right to the bilge. Just above the stove is a small cabinet for glasses. Next aft is the ice-box, holding 200 pounds of ice, with two compartments for food. Over the ice-box is the dishracks, and under the stove is a place for the pans.

On the port side forward is the toilet room, 3½ x 3 feet, with toilet and wash basin installed. A Trimount rotary bilge pump forms part of the equipment here and is used for pumping out the boat.

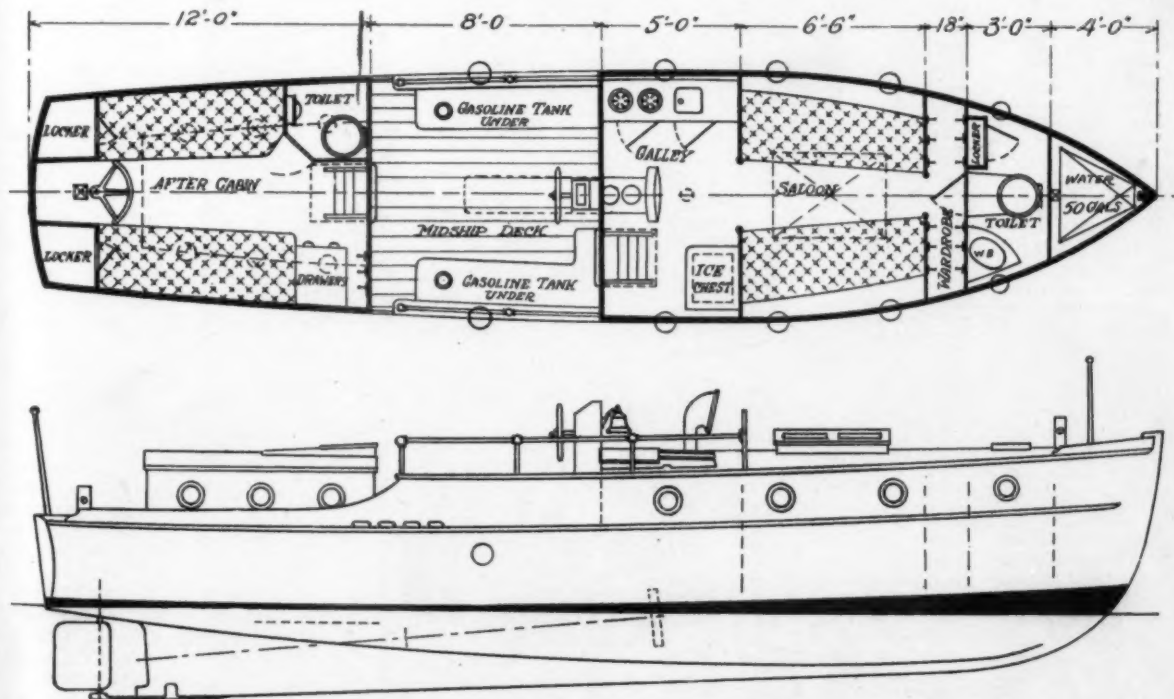
Next aft is a cupboard for food and on top of it is a Victrola, as this stand is just 3 feet 8 inches high. There is a sink with drainboard on the forward bulkhead, between the toilet room and the galley.

The balance of the cabin on both sides and in the rear end is divided into lockers, the lockers being 30 inches wide by 6½ feet long, and the rear locker 3½ feet wide by 7½ feet long. The rear deck is 5 feet long by 7 feet wide, and is covered with awning reaching from the pilot house full to the stern.

Life preservers are stowed under the rear deck, having large doors opening onto the main cabin, making them readily accessible.

I have more room on this boat than the average owner of a 50-foot boat has, and can easily accommodate six persons on long cruises and more in a pinch for short trips.

C. G., Baltimore, Md.



The possibilities in a 40-footer are well brought out in this design by A. O. G.

# Cookery Afloat and Ashore

Problem of Cooking on Small Boats Has Been Met by Compactness in Stoves and Use of Chemical Fuels—While Meals Ashore May Be Prepared from Devices Carried Under the Arm

**C**OOKING afloat if the boat be equipped with the proper range and the galley large enough for the performance is not as difficult as the landlubber imagines, but cooking afloat when the boat is small and perhaps galleyless presents a problem not easily solved. Some cruising parties attempt its solution by landing in an attractive cove and doing the cooking ashore, but unless the proper equipment has been provided this is only a trifle less difficult than performing the same operation on the boat. Hence, with this in view we are presenting herewith a description of some of the novel and compact cookery devices which have been manufactured just to help motor boating get a regular meal. The descriptions are given to you just as the manufacturers have described them to us and in their own language. **MoToR BOATING** is not attempting to advise its readers which sort of outfit to secure, but leaves it to their own good judgment after they have had an opportunity of reading what the men who make these cooking outfits say for themselves:

"Theroz Appliances, manufactured by the Theroz Company, Woolworth Bldg., New York, include a number of utensils suitable for use in preparing food on motor boats and ashore.

"The Theroz Blue Flame Stove is ready for service when ordinary means for cooking—coal, gas, etc., are not available. Two burners afford a cooking surface radius of 8 inches each. It is readily portable, serving as a carry-all for provisions and utensils. In order that this stove should be practical for salt water use, the metal used in its manufacture is rust-proof iron, and trimmings are of copper. Its total weight is approximately seven pounds. It insures a hot meal whenever wanted, irrespective of wind or weather.

"The Theroz Mess Kit is a compact, ingenious device for boat and outdoor cooking. It is readily portable, or fits easily into any limited space. It weighs less than two pounds, including fuel and all units nest snugly into one another. It is made entirely of aluminum. The nine separate parts are designed with such military accuracy that triple-decker action, changing to fryer, collapsing and nesting, is but a matter of a moment.

"In ten minutes you can have hot soup, fresh coffee or tea, and hot beans for two people. In a jiffy convert the Kit

into a fryer, and have crisp bacon and eggs to round out a good square meal.

"Theroz Fuel is the quickest, hottest, safest and most economical emergency fuel and will efficiently satisfy all demands. Theroz Fuel gives 20 per cent. more heat (official Government test) than any other emergency fuel. It is safest, because it is the only emergency fuel that remains solid while burning, eliminating danger, it cannot spill if upset. Immediately upon applying a match to Theroz Fuel, it produces its full intense heat which quickly cooks a meal. It burns without odor or soot and leaves no residue."

"The Auto Kamp Kook Kit, manufactured by the Prentiss-Wabers Co., Grand Rapids, Wis., is thoroughly practical in every detail. It is made of 24-gauge steel; and cannot break. The hinged cover turns back to form a shelf or warming plate. The enamel is baked on so that it cannot rust. There is nothing to lose or get out of order. It forms its own container when folded, and has a handle for carrying.

"All you have to do is just light a match and start cooking. The Auto Kamp Kook Kit folds into a small, compact package for carrying; the suitcase outfit designed for two being a popular size. This case is made of auto steel, enamel finish. The outfit contains a stove and its equipment of plates, cups, solid nickel silver knives, forks and teaspoons, one tablespoon, one kitchen knife, one each salt and pepper shaker, one can-opener.

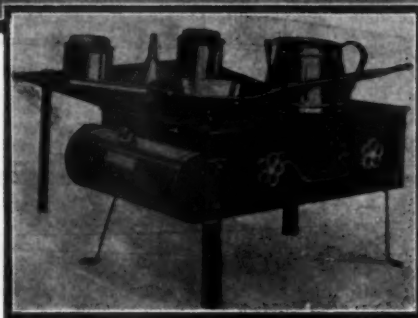
"The stove is lifted out of the case ready for action in a few seconds. It burns gasoline, the same grade used

in the boat, with an intensely hot, blue flame. It is regulated in the same manner as a gas stove. There is no soot, smoke or odor. It will not blow out in a thirty-mile wind and is great for heating the cabin on a cold day. Anybody can operate it. It can be set up anywhere."

"The Upton Kamp Kook Kit is manufactured by the Upton Machine Co., of St. Joseph, Mich., has two cups, two frying pans, a kettle for making coffee and stewing and a grid. The grid is a folding rack with legs which thrust downward. There are detachable handles with all utensils. All nest compactly together with a size of only 9½ x 4¼ x 2½ inches. It weighs two pounds. It is a



Above: This is a compact, ingenious device for boat and outdoor cooking. It uses a safe, economical chemical fuel that generates heat sufficient for all ordinary cooking purposes



Left: Here is a practical stove that is carried like a suitcase and is the same size. All you have to do is light a match and start cooking. It can be set up anywhere, irrespective of the contour of the ground



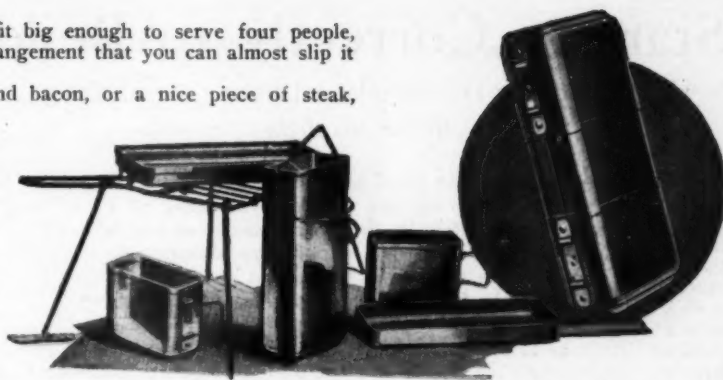
complete cooking outfit big enough to serve four people, yet so compact in arrangement that you can almost slip it into your pocket.

"Real fried eggs and bacon, or a nice piece of steak, and a cup of steaming coffee taste fine made from this kit."

"The Auto Camp Stove, made by the Auto Camp Stove Co., of Fort Wayne, Ind., is always ready for use. No setting up or assembling of parts. All that needs to be done is simply to lift it out of the box, and it is ready. The stove is mounted on a steel base so that it can be removed from the case in which it ordinarily sits, and used on a stand on the deck or on the ground ashore. The gasoline reservoir is a bowl spun out of copper, buffed to a high polish and lacquered. All fittings are of polished brass, which makes it rust-proof and particularly adapted to use on boats. The outfit is permanently assembled and the motion of the boat will in no way affect its operation.

"An air pump which is attached to the gasoline reservoir by means of a ball point connection, is furnished with each stove. The air is forced into the reservoir through a specially designed valve. An ingenious arrangement is provided to remove the possible carbon formation—the bane of most gasoline generators. The position of the generator insures ample heat, yet it is always out of the way. The general appearance of the outfit is neat and attractive.

"The carrying case is a standard size Ford tool box, and to operate it, one simply removes



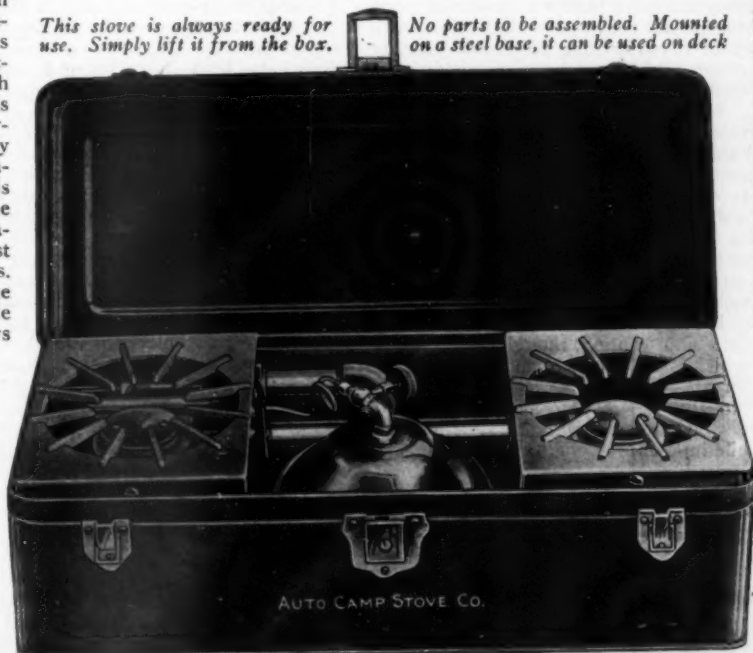
*This camp kit includes all necessary cooking utensils; can be set up in a jiffy and it only weighs two pounds*

and the heating surface provided. The burner is covered with a ribbed grate ample to take care of any standard cooking utensil. The same facilities are provided as on an ordinary gas or gasoline range. Convenience and service were the two prime objectives in designing the stove."

"The Umbrella Camp Stove is manufactured by the Umbrella Camp Stove Co., of Mount Vernon, Wash., and is the only camp stove with a revolving grate. It is made of iron and steel, and with ordinary use will last a lifetime. It will not warp or get out of shape. The stove consists of an adjustable tripod, center rod and revolving grate. The grate is always level, even in rough weather. The stove is all in one piece. When set up for use the stove is solid throughout and the grate will not (Cont'd on p. 64)

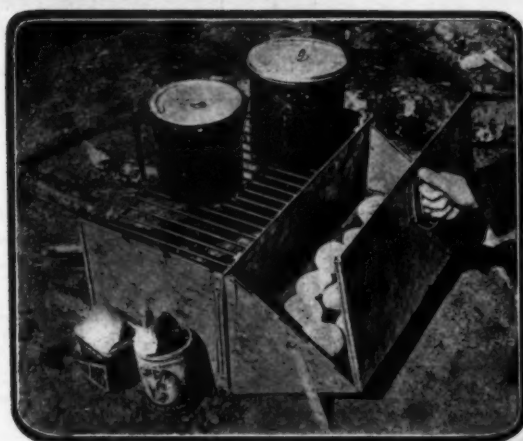
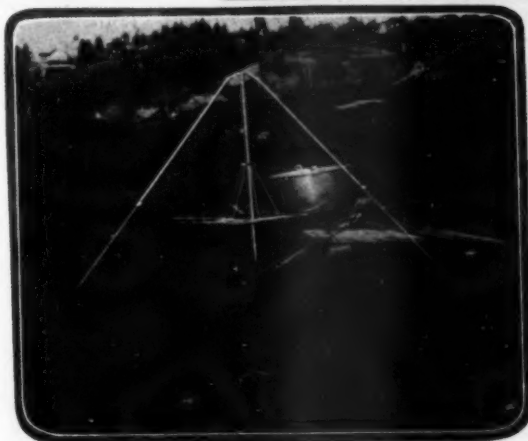
*This stove is always ready for use. Simply lift it from the box.*

*No parts to be assembled. Mounted on a steel base, it can be used on deck*



*Below: Here is a stove made in the shape of an umbrella. It can easily be carried under the arm*

*Below: This is a folding broiler stove. It takes about two seconds to set this stove up*



# Starting Correctly to Build

## III—Featuring Deadwoods and Boring the Shaftlog

By William Atkin

**I**N the preceding article of this series, which appeared in July MoToR BOATING, I covered in some detail the subject of a small boat's stem and keel. Purposely I omitted, except to refer to it as to be taken up later, all details of deadwood construction and all details as to the cutting or boring of the shaft alley.

If there is any one part of a boat's construction more important than another I believe it is the shaftlog, and the deadwood about it. In nine cases out of ten if a boat has one of those annoying leaks that, to find, baffles all experts on boats, its location will eventually be found in the deadwood somewhere. And the finding of such a leak is often times an easier matter than its effectual stoppage. The deadwood, like every other part of a boat, may be constructed in a great variety of ways and yet fulfil its function. All designers, all builders, have ideas of their own as to the best type of construction for this particular part of a boat, and as these many different methods of construction all work well in practice I shall not be so bold as to set forth one type of construction as better than all others. Rather I shall take up a number of different ways of making the deadwood, any one of which, if properly put together, will make a first rate job.

A word as to the most suitable wood from which to construct the deadwood may not be amiss. Oak, white oak, is considered to be the superior of all woods for strength, for comparative lightness of weight, for hardness of texture, and for durability combined. This wood is therefore ideal for use as material for deadwood. Almost any other species of oak makes splendid building material for this part of the boat excepting red, sometimes called western oak.

A good grade of yellow pine is second choice to oak, for it is strong, light, and long-lived; it, however, is soft of texture—it's only fault. One caution, though, as to yellow pine—select lumber which is full of pitch, and of "sap"; the latter being the soft, cream-colored wood next to the bark. This "sappy" wood will decay rapidly while immersed.

Cypress makes not a bad substitute for yellow pine. It will last for years in or out of water, but has not the holding power, for fastenings, of either oak or yellow pine.

In speaking of the deadwood here I am including the stern post and all the wood that goes into the completed backbone of the

**This article is the third of a series by Mr. Atkin which will take up the complete building of a boat, step by step, in the proper order in which the construction work should be done. By following the articles in this series any amateur will be able to build his own boat.—Editor.**

boat except the keel proper.

In drawing Figure XI a simple form of deadwood is shown. This type is particularly adaptable to small boat construction and I shall describe it first because I especially like its makeup. A

sterling feature of it is the stern post, which extends inside the boat and is anchored above to a cockpit floor beam, or even to a deck beam.

The stern post thus extending through the bottom prevents the keel from wringing, which, in turn, assures tight garboard strakes, and a propeller shaft always in alignment.

In Figure IV (July MoToR BOATING), a stern post of this kind is shown with its attendant parts in correct proportion for small boat construction. The stern post should be equal in thickness to the keel and deadwood, in the little boat which is our sampler  $2\frac{3}{4} \times 6$  inches wide, the same dimensions as the keel; the deadwood is of course of equal thickness.

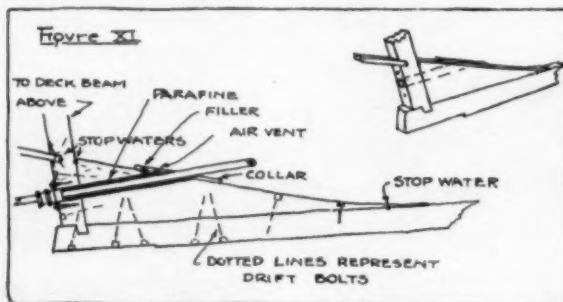
These three members are fastened together with  $\frac{5}{16}$ -inch diameter galvanized rods, technically called drift bolts, which are represented by dotted lines in Figure XI; the drift bolts, by the way, being driven into auger holes previously bored and at various angles, the object of the latter being to doubly fasten the parts by an operation known as "toe-nailing." The outer ends of these fastenings should be plug bored, that is, counterbored with a  $\frac{1}{2}$ -inch bit to a depth of approximately  $\frac{1}{2}$  inch; these are plugged with wooden boat plugs. In explaining this I have interchanged the process though; the plug holes should be attended to first, the rod holes second, the rods driven home third, and the plugs inserted last.

The stern will be supported and fastened to the end of the horn timber, which is the member that is notched into, and extends aft from the stern post.

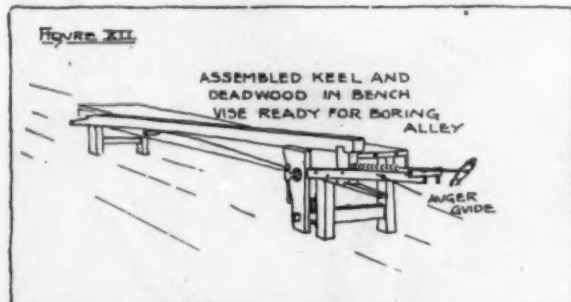
Whenever two pieces of timber come together as the joining between the ends of the shaftlog and the stern post a

stop-water must be applied. A stop-water is a cylindrical piece of soft wood driven lightly through an auger hole which extends through the deadwood at every joint, and in such position that it will be in the rabbit and so covered with the garboard plank when the latter is applied.

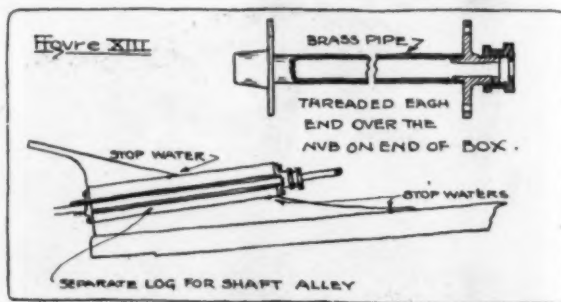
There are various ways of cutting the alley through which the propeller shaft extends. If the hole is not longer than five feet one had best bore it with a ship



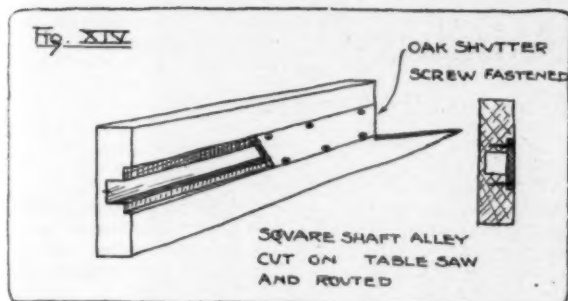
A simple yet well-designed deadwood



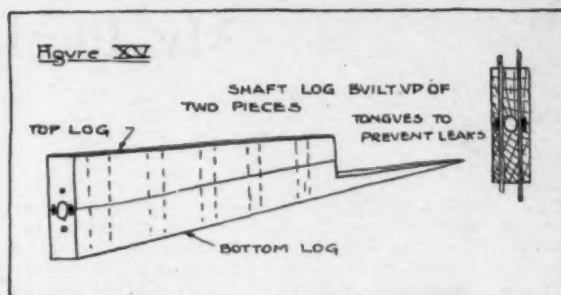
Guides and auger in place for boring



A more expensive construction for a deadwood



*A form of deadwood suitable for long shaft alley*



*The two-piece deadwood which is good practice for large boats*

auger, which is a bit-like tool with but one cutting lip, and without a worm (the screw thread on the cutting end).

Clearance must be allowed between the wall of the alley and the shaft. A good rule to follow here is to cut the diameter of the alley one-quarter of the diameter more than the diameter of the propeller shaft—in other words, if the propeller shaft is 1 inch in diameter add  $\frac{1}{4}$  inch (obviously, one-quarter of the diameter) for clearance; if the shaft is 2 inches in diameter add  $\frac{1}{2}$  inch, and so on.

The thin man, Figure XII, is breathlessly engaged in boring the shaft alley of our 14-foot 8-inch motor boat. Notice that he has applied guides in the form of two  $1\frac{1}{2}$  x 4-inch boards which are screwed to each side of the deadwood, thus extending aft for a distance of 3 feet; the length and heftiness of these depend, of course, upon the size and the length of the hole to be bored. Fitted across the extreme end of these is a cross member in which is a half-circular notch. The shank of the auger lies in this and with judgment upon the part of the person who bores, effectually guides the auger along a true course. Ship augers of  $1\frac{1}{4}$ -inch diameter are seldom longer than 4 feet. It is therefore necessary to bore from both ends of the log and by the same process of guidance as described above if the alley is longer.

All boat builders have made good use of a burning iron for trimming up the inside of the shaft alley. A splendid instrument of this kind can be made by any blacksmith, for it is but an 8-inch length of 1-inch diameter round iron welded to a shank of lighter iron. The large end of this heated to a glowing red will do wonders in the way of burning off the high spots if they exist anywhere in the alley.

I have found that the best of all methods of assuring an absolutely water-tight, and incidentally always lubricated a shaft alley, is to treat it to a bath of molten paraffin.

Although this stage of the construction is too early for applying this bath, it may not be amiss to tell something of it now, for it's a pet idea of mine which has worked so well in practice, and lends itself so well to the type of deadwood shown in Figure XI, that this seems an opportune time in which to describe it.

Before the propeller shaft is inserted permanently, fit a thin hardwood collar, about  $\frac{1}{2}$ -inch thick, at the inboard end of the shaft alley. The propeller shaft should slip through this with perhaps  $1/16$ -inch clearance all around the shaft. Do not fasten this collar until the shaft is perfectly ligned and coupled to the motor.

Assuming now that the motor is installed, that the shaft is in ligne, that the stuffing box is in place secure, and last

but not least, that the shaft alley is free of shavings and sawdust, screw the wooden collar in place; then bore a  $\frac{3}{4}$ -inch diameter hole, which will be a filler hole, and  $\frac{1}{4}$ -inch diameter hole, which will be an air vent as shown in Figure XI. Use care, too, to prevent most of the chips from the auger bit from falling into the alley.

This complete, heat sufficient paraffin to a point at which it runs as freely as water and pour it slowly into the larger of the two auger holes. The hot paraffin will trickle into every niche, check, crevice, and seam; will fill the space about the shaft with a velvety lining, and will create an effective barrier to any water which is bold enough to try to leak into the boat through the deadwood. The paraffin will also prevent bilge dirt and grit from finding its way into the shaft alley, there to chew away at the rapidly revolving shaft, and thus cut its polished surface to a degree where a new shaft is needed. I have seen the latter condition many times, so perhaps have you who read.

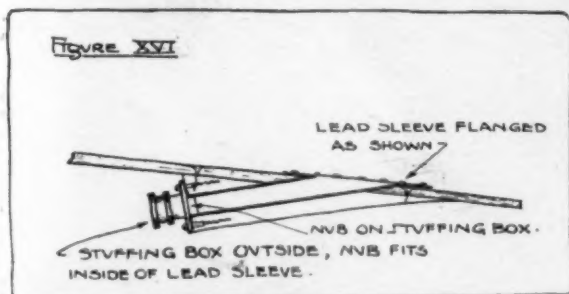
Several years ago I designed a husky cruiser whose skipper piloted her among the rocks in back of Execution Light on Long Island Sound. Except for gouging several nice slivers out of the keel, tearing off the rudder shoe and bending the propeller and shaft so that the tail end of the latter slanted off at an angle of about 30 degrees from its original alignment, and incidentally pulling the stuffing box out by the roots, little damage befell.

After a grand rush to see what had happened both outboard and inboard the crew failed to detect water leaking in anywhere, and as the few craft in the vicinity seemed to prefer the deeper water in the offing, our good ship with the bent shaft, etc., got under way and without further acquaintance with the generous sprinkling of rocks in that neighborhood motored out into clear water. Incidentally, no tow being in sight, bent shaft, loose stuffing box, and all, plugged on to their destination, 35 miles away.

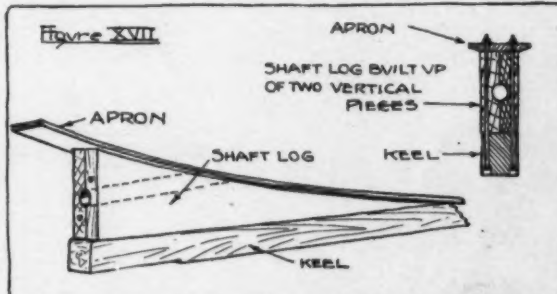
Next day upon hauling out, the shaft alley was found to be funnel shaped; its large diameter aft. That bent shaft had cut the wood away like a cutter in the mandrel of a lathe.

Fortunately, in building this cruiser the alley had been treated to a large dose of melted paraffin and it did yeoman service on that trip of the good ship Vic IV, one time featured in MoToR BOATING as "The Big Little Boat"—without an inboard stuffing box, and without an outboard one, and despite a bent shaft not a drop of water found its way inside.

(Continued on page 92)



*For the craft with a flat keel or without full deadwood*



*Shaftlog of two vertical planks with a circular alley*



# My Ideal Auxiliary

No. 7, Gob—A 28-Foot V-Bottom Auxiliary Motor Boat

By A. E. Doane

LET us first define what an auxiliary really is. It may be divided into three classes: First, an out-and-out sail boat with just enough power to move it if the wind gives out; second, this class may be termed as an ordinary motor boat with small auxiliary sail that is only used in case of trouble with the power plant or on long cruises, and third, that exceedingly rare type which combines the desirable points of both the sail and the motor boat. I have decided to put my Ideal Auxiliary into this last class, for reasons which will follow later.

As the class has now been decided on, I will briefly state a few requirements. It must be an absolutely seaworthy boat capable of weathering any conditions that might be encountered either on Long Island Sound or off the New England coast. There should be comfortable sleeping quarters for a party of three or four with ample toilet and galley facilities and also plenty of deck room. The construction must be simple so that there will not be much bending and steaming, yet rugged enough to insure a wide range of safety. The speed should be good under sail or power, and the cost to be kept within reasonable limits.

I have decided, as may be seen from the illustrations, upon the raised-deck, V-bottom type, because in my mind it fills the requirements nearer than any other. It is hardly necessary, I think, to say much about the remarkable qualities of this type, as it has been described so many times. Those who have had any experience with properly designed V-bottom boats are fully aware of their remarkable dryness, steadiness, and speed either under sail or power. The lines, as may be seen from the drawings, are very easy and seaworthy, yet they will drive very smoothly.

The freeboard is considerably lower than generally found on most motor boats of this size; the reason for

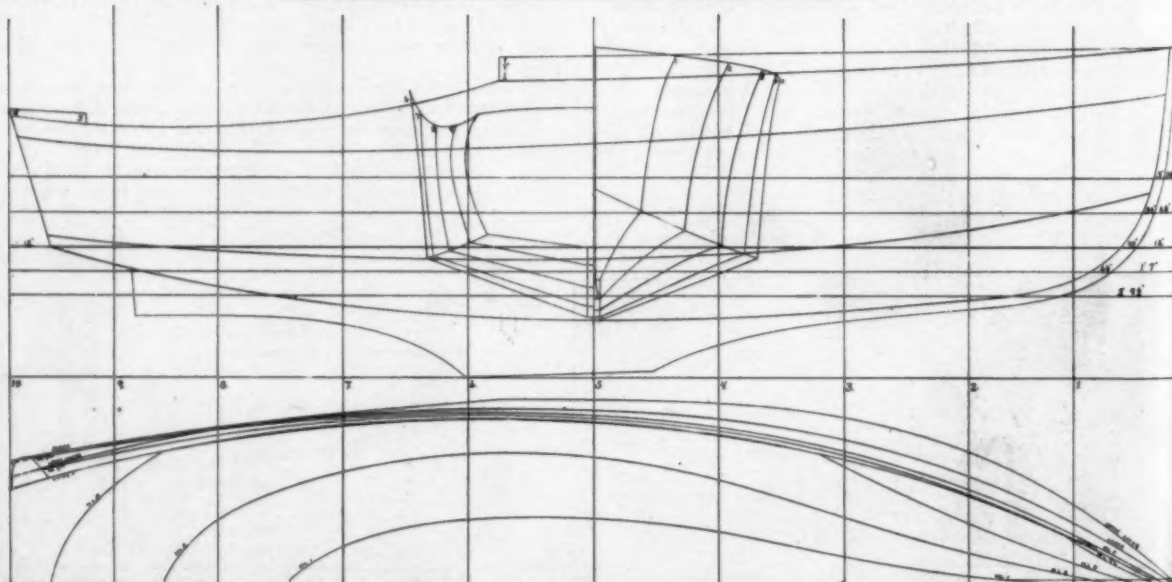
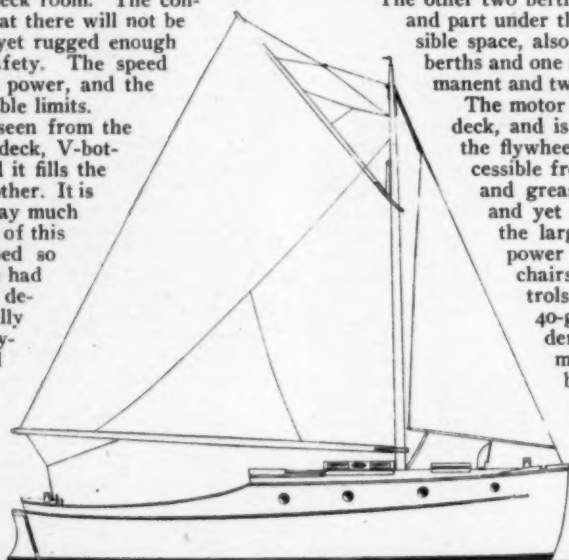
this being to reduce the wind resistance as much as possible. Yet there is ample room below, much more than in trunk-cabin types, and headroom for an ordinary person, while for those of lengthier variety, nearly 6 feet is provided under the skylight.

The accommodations are as generous as those found in most 35-footers. First comes the chain locker, and then the toilet with shelves and two oilskin lockers. Next there is a handy little buffet, on which a Victrola may be placed, with cupboard above and drawers and locker space below. Opposite this is a clothes closet, followed by a comfortable berth. A swinging berth is also provided which forms a comfortable back rest during the day. The galley is directly opposite and consists of a large table with ice-box and locker under and dish racks above. A Shipmate range is part of the equipment—but an alcohol stove may be used if desired.

The other two berths were placed part in the cabin and part under the bridge so as to utilize all possible space, also that there would be permanent berths and one swinging berth, and not two permanent and two swinging berths.

The motor is placed under the large bridge deck, and is completely enclosed except for the flywheel, which for convenience is accessible from the cabin. This keeps the oil and grease from getting into the cabin and yet the motor is easily reached by the large hatch over it. When under power the bridge makes a fine place for chairs, and when under sail the controls are brought to the stern. Two 40-gallon fuel tanks are located under each seat. In order to place more weight forward and also to balance the galley, I have placed the water tank under the forward berth.

The motor that I have in mind is a medium-speed three- or four-cylinder four-cycle machine, of between 16 and 20 h.p., and with this power plant Gob should do well over



Lines of the V-bottom Gob. Scale:  $\frac{1}{4}$  inch equals 1 foot

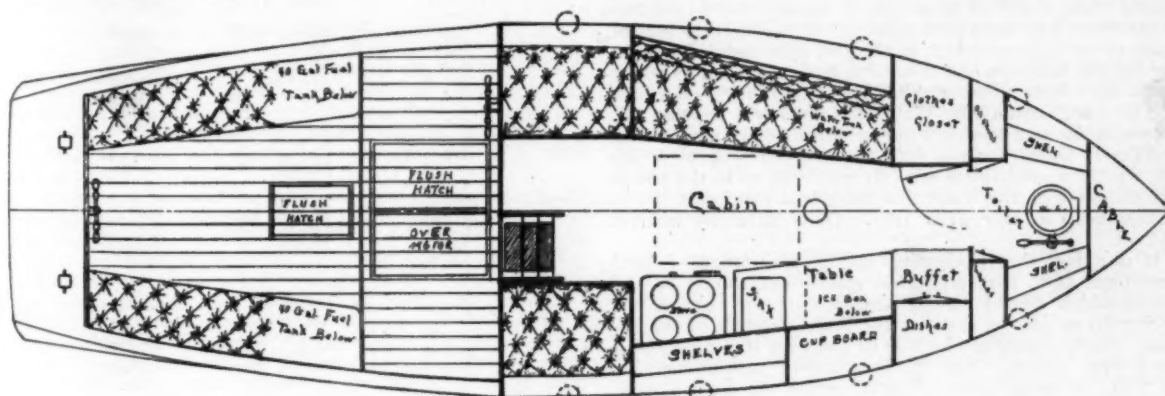
10 miles an hour. She should handle well under canvas and with her 350 square feet of sail will step right along in a good breeze.

Little need be said about the construction, as I think that this is made clear by the sectional drawings, but, as stated before, everything is to be amply heavy.

The keel runs from the stem to and forming the lower part of the stationary center-board, and the metal keel is fastened to it. Between the main keel and the shaft-log there will be a filler of the

HEIGHTS FROM BASE LINE.												
Sta	10	9	8	7	6	5	4	3	2	1	Stem	
UPPER SHEER	6'-5"	6'-8"	6'-8"	6'-4"	6'-10"	7'-2"	7'-3"	7'-4"	7'-7"	7'-9"	8'	
SHEER	5'-9"	5'-8"	5'-5"	5'-5"	5'-6"	5'-7"	5'-9"	6'-3"	6'-3"	6'-6"		
CHINE	5'-4"	5'-5"	5'-4"	2'-11"	2'-10"	2'-10"	2'-11"	3'-2"	3'-7"	4'-2"		
RABBET	3'-1"	2'-9"	2'-2"	1'-9"	1'-6"	1'-5"	1'-5"	1'-7"	1'-10"	2'-4"		
KEEL			1'-6"	1'-3"	7"	14"	9"	1'-4"	1'-8"	2'-2"		
BREADTHS FROM CENTER LINE.												
WL 1				11"	1'-7"	1'-7"	1'-5"	8"	2'			
WL 2			1'-6"	2'-9"	3'-2"	3'-1"	2'-6"	1'-7"	9"	2'		
CHINE	2'-7"	2'-11"	3'-5"	3'-10"	4'	3'-11"	3'-7"	5'-5"	2'-2"	1'-1"		
WL 3		2'-4"	3'-5"	3'-10"	4'-5"	3'-11"	3'-7"	2'-10"	1'-6"	6"		
WL 4	2'-9"	3'-2"	3'-7"	3'-11"	4'-1"	4'-5"	3'-8"	3'-1"	2'-2"	1'-8"		
WL 5	3'-5"	3'-4"	3'-9"	4'-5"	4'-2"	4'-1"	3'-9"	3'-5"	2'-4"	1'-3"		
SHEER	3'-2"	3'-5"	3'-9"	4'-1"	4'-3"	4'-2"	4'-5"	3'-6"	2'-7"	1'-6"		
UPPER SHEER	2'-9"	3'-3"	3'-9"	4'-1"	4'-4"	4'-5"	4'-4"	4'-5"	3'-2"	1'-1"		

Table of offsets for building Gob



Interior arrangement plan of Gob. Scale: 1/4 inch equals 1 foot

## To Victory on Victory II

(Continued from page 9)

she was burning soft coal instead of the precious fluid. Eventually this put Marilene out of the race altogether, as later results will show.

Fire Fly, Kodak and Albethwa were having a match race all of their own with the odds a little in favor of Kodak, although in our opinion she had surrendered her fine chances of winning first prize by signing on a crew of eight or nine persons. They blackened the decks of this little 34-footer and made her resemble a Coney Island steamboat on a hot summer's afternoon. Lady Bird and Uonda were trailing, the showing of the latter being the greater surprise of the race because she was generally rated up among the leaders.

By 12.30 o'clock the excitement and congestion at the start had abated somewhat and the various captains had a chance to size up the general situation and decide upon the details for the long grind down the Sound and out into the ocean to Block Island. The owner-skipper of Victory was so well pleased with the showing of his craft that he promised the mate a certain reward for each lighthouse he passed without being

overtaken by a competitor. We were still holding Gardenia boat for boat and apparently holding our own with the leading Old Glory IV. The revolutions of the old reliable Sterling motor had gone up slightly since the start and warned that if care was not taken our stated r.p.m. would be exceeded and make us liable to disqualification. So the skipper "cut down on her" a trifle, which made a slight but perceptible difference in our speed, as Gardenia began to draw away slightly.

At 1.26 we were abeam of Lloyds Point Bell Buoy, 15 miles from the start, having covered the distance at a speed of 10.47 miles per hour. We clocked Old Glory as she passed the same mark slightly less than 3 minutes ahead of us. As thirteen per cent. of the distance had been covered, she should beat us to the Island by 23 minutes if the same relative speed was maintained throughout the rest of the trip. As Old Glory IV had to allow us 53 minutes, we felt pretty safe, although the factor of safety was none too great. As later results show, Old Glory IV only led Victory II across the finish line by 6 minutes.

(Continued on page 68)

## COMPLETE SUMMARY OF RESULTS OF TENTH ANNUAL BLOCK ISLAND RACE, JULY 12, 1919

Boat	Owner	Club	L.O.A.	L.W.L.	B.O.A.	M.S.	Motor	Bore and Stroke	No. of Cyl.	R.P.M.	H.P.	R	Allow-ance	Elapsed Time	Cor-rected Time
Victory II	H. A. Jackson	N. Y. A. C.	35.0	35.77	9.0	9.12	Sterling	4 1/2 x 5 1/2	4	575	15.844	35.0	1-36-47	12-02-10	10-25-23
Kodak	R. J. Haslinger	Hudson River	34.04	32.33	10.21	11.2	Sterling	4 1/2 x 5 1/2	4	660	18.15	34.06	1-55-42	12-36-25	10-40-43
Old Glory IV	G. P. P. Bonnell	Byram River	32.95	32.42	7.54	5.51	L. V.	4 1/2 x 5 1/2	4	575	14.01	37.81	0-43-35	11-56-10	11-12-35
Fire Fly	A. E. Aitken	N. Y. A. C.	34.04	33.17	9.67	11.88	W. & C. 6	x 7	4	395	26.06	36.62	1-05-32	12-45-15	11-39-43
Lady Bird	W. C. Deane	Knickerbocker	29.25	28.625	8.312	6.125	Peerless	4 x 6	4	870	21.87	40.45	0-00-00	14-07-12	14-07-12
Gardenia	H. Anderson	N. Y. A. C.	48.42	43.79	10.25	12.32	Standard 6	x 8	4	380	28.66	38.36	0-40-35	11-50-00	11-09-05
Uonda	A. B. Duryee	Huguenot	42.17	40.0	10.42	10.55	Lamb	6 1/2 x 7	3	395	22.94	37.36	0-58-33	12-46-35	11-48-02
Marilene II	H. M. Williams	N. Y. A. C.	46.0	45.06	12.52	11.27	Buffalo	6 1/2 x 9	4	500	53.67	40.95	0-00-00	Did Not Finish	Did Not Finish
Albethwa	A. S. Walker	N. Y. A. C.	50.13	47.08	10.96	13.21	Standard 6	x 8	4	350	25.45	37.01	1-05-45	Did Not Finish	Did Not Finish

# An Open Race Which You Can Win

A Contest Scheduled for August 30 on Long Island Sound  
Which Will Require More Than Motor Efficiency to Win

WHEN interest in racing lags, the club officials in the east always know where to turn to find a motor boatman who can suggest something in the race line which will be new and novel and which will attract a good entry list. So when Commodore Sunderland of the New York Athletic Club called a meeting in the early spring of all his club members to suggest plans for the season's races and when Captain McAleenan had offered to present a valuable trophy if a race could be arranged with the conditions such that all entries would have an equal chance to win it was only natural that the Commodore should pass a signal to that old time sea dog Commodore H. A. Jackson, to get his gray matter busy.

What Commodore Jackson has turned out shows that those who prophecy that motor boat racing among cruising motor boats is a dead issue are all wrong. It is true that lately there may have been a falling off in the entry lists of some of our classics which in the past were decidedly popular but this has been due to several recognized causes which could have been eliminated had there been any real effort.

The chief reason why racing has been less popular this season is due to a tendency on the part of officials and committees to select courses with the only element to decide the winner a mechanical one. It was then up to the power plant alone with the result that some boat continued to win on handicap in race after race. Quite naturally interest fell off.

It is a fact that navigating ability, knowledge of local conditions as to currents, tides, winds, etc., should be elements which should receive attention on the part of the racing crews just as much as the brute strength of the engine. Many a race can be won or lost by a slip in choosing the proper course. And so Commodore Jackson decided to select seven courses of equal length on Long Island

Sound and to allow each owner to select the particular one of the seven courses he prefers to sail in the race of the New York Athletic Club for the McAleenan Cup. The starting and finishing points of the seven courses are the same but excepting their equal length all follow different routes down and across the Sound from Huckleberry Island to Lloyds Harbor. The length is 25 nautical miles and the date is August 30—the Saturday before Labor Day—so there should be a good entry list.

The courses which may be sailed are as follows: Huckleberry Island to Lloyds Harbor by any of the courses stated below. Contestsants must notify Commodore Sunderland.

Course	Buoy	Location	Pass Mark on Your
A.....	Gas 24 Bell 13A Can 13 To finish	The Cows Lloyds Pt. Eatons Pt.	Starboard Port Starboard
B.....	Spar 20 1/4 To finish	Greens Ledge	Starboard
C.....	Spar 17 Gas 24 Can 13 To finish	Matinicock The Cows Eatons Point	Port Starboard Starboard
D.....	Bell 32 Bell 19 Bell 13A Spar 1 To finish	Hart Island Prospect Pt. Lloyds Pt. Northport Bay	Port Starboard Starboard Starboard
E.....	Bell 2 Bell 26 Bell 13A Spar 1 To finish	Mott Pt. Bluefish Shoal Lloyds Point Northport Bay	Port Starboard Starboard Starboard
F.....	Spar 24 1/2 B Spar 1 Bell 13A Can 13	Greenwich Pt. Oyster Bay Lloyds Pt. Eatons Pt.	Starboard Port Starboard Starboard
G.....	Gas 28 S. C. Bell 19 Bell 26 Bell 13A To finish	Scotch Caps Prospect Pt. Bluefish Shoal Lloyds Pt.	Starboard Port Starboard Starboard

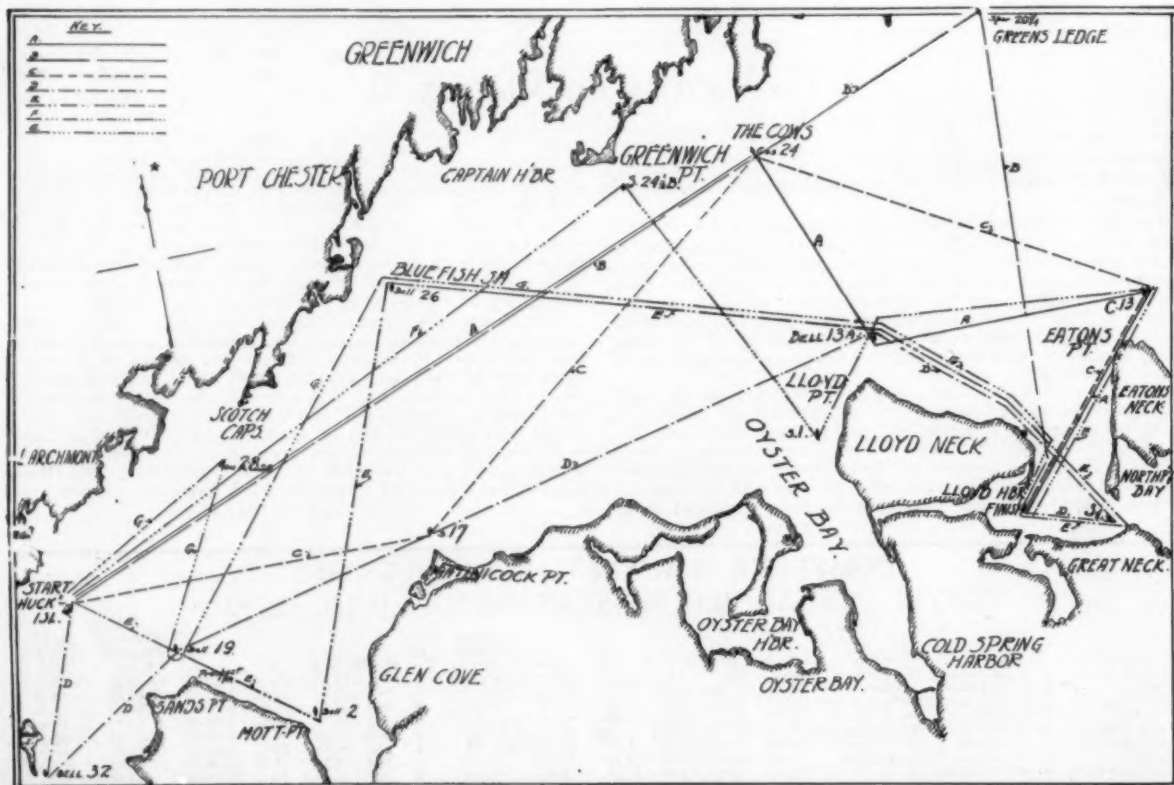


Chart of the courses for the New York Athletic Club's race for the McAleenan Cup



# Hints on Keeping the Motor in Shape

## No. 3—The Buffalo Engine

**G**AS engines are a good deal like human beings. Properly nourished and cared for, they are capable of good service, always provided that they are free from constitutional defects. Without proper care the life of the best of them is short and full of trouble. Constant attention to small disorders is worth more than frequent overhauling. It is the stitch taken in time which prevents a breakdown and prolongs the life of man or motor. Guard against bad fuel as you would against unwholesome food. Let an overheated part carry the same warning that Nature gives you through the clinical thermometer. Don't forget that knocking and thumping is the way your engine coughs, and a neglected cough may be fatal. And, most important of all, remember that the time to call the doctor is when illness is starting. And in just the same way should you care for the engines manufactured by the Buffalo Gasolene Motor Company.

Before starting see that your gasoline tank is filled, that there is a proper supply of lubricating oil, that all grease cups are filled, that the batteries are in working order, that all nuts and bolts are tight, and that all wires are properly connected. Turn on the circulating water supply and open the water overflow valves. Before casting off from the landing see that the clutch is in neutral and then start the engine.

In starting turn on the gasoline supply. On heavy-duty models make sure that the compression cocks are open. If you have an underwater exhaust see that it is cut off. Make sure everything is right with the lubrication. Prime the cylinders with a few drops of gasoline injected through the priming cups, set spark advance lever on retard or "starting" position, throw the ignition switch to the battery side and turn the engine over either by hand or by whatever means is provided for the purpose. If the engine does not start after a few turns, locate the trouble. After you have the engine turning over cast off from the landing, throw the reverse gear lever into "go ahead" and the operation of starting is completed. After starting, the battery can be cut off and the magneto switched on.

It is better to stop by means of the switch than by the throttle, but be careful to open the switch again before the engine is left standing, for it lessens possibilities of short circuiting. Turn off gasoline supply at carbureter. If there is any danger of freezing, all water should be drawn off from the water jackets, piping, and pump before the engine is left standing. Before leaving the boat see that the clutch is at neutral, and make sure that the gasoline supply and ignition are shut off.

Failure to start may be due to poor spark, improper supply of gas, or lack of compression. First test your

batteries and make sure the gasoline supply is turned on. You should have a good blue-white spark at the spark gap. If you get a sputter of sparks, put in a new plug, and if the same sputter of sparks continues there is probably a short circuit. If the ignition is found to be all right, make sure that the carbureter is not flooded and the engine getting too rich a mixture. If so, drain the carbureter and correct the gas supply and the engine should start. If the trouble is due to poor compression, temporary relief may be obtained by putting a small quantity of cylinder oil into each cylinder, which will tend to prevent loss of compression past the rings. Water in the cylinders always causes trouble in starting.

The most common reasons for knocking are carbon deposits on piston heads, a loose connecting rod bearing, loose crankshaft bearing, spark advanced too far, or engine overheated. Do not forget that a loose flywheel, propeller or stuffing box or trouble in the reverse gear is sometimes confused with a cylinder knock.

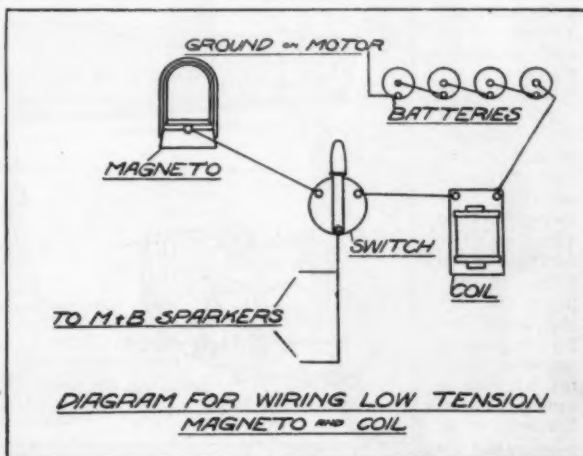
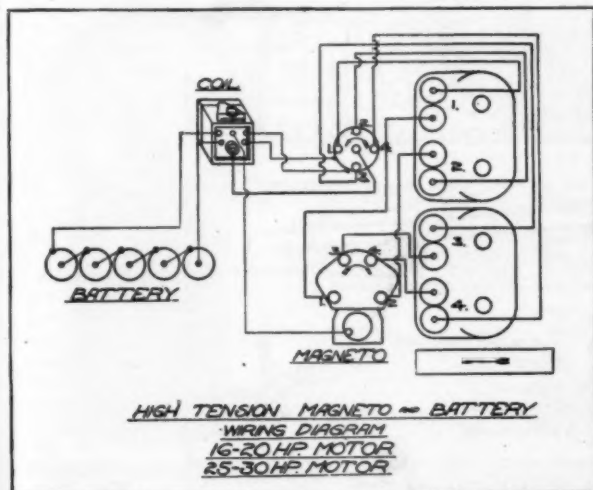
Overheating is almost always due to an insufficient supply of circulating water, lack of oil, or it may be caused by the spark being too far retarded, the mixture too rich or the carbon deposits in the combustion chamber. Sometimes the trouble is due to the collection of sediment in the water jackets. This can easily be remedied by means of the removable water-jacket panels with which Buffalo engines are equipped.

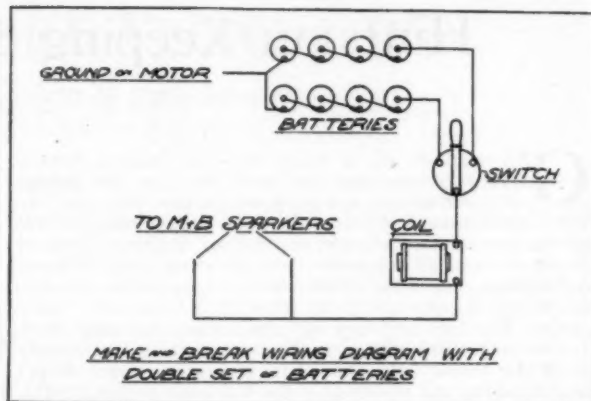
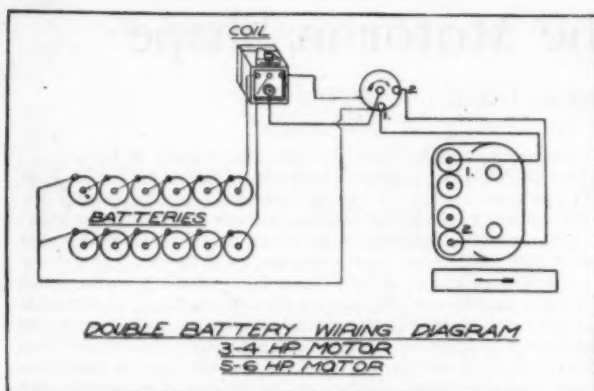
Lack of power may be due to poor compression, leaky valves, improper mixture, dirty spark plugs or other ignition trouble, or weak valve springs. Before spending much time in trying to locate the cause make sure that your propeller is not fouled with weeds.

Premature firing may be caused by improper timing, overheated cylinder or deposits from carbon in the cylinder, but trouble from the latter cause is accompanied by pounding.

Back firing is caused by delay in combustion of a previous charge of gas. This is usually due to an insufficient charge of gasoline, which makes a slow mixture, with the result that it explodes not only on the power stroke but on the exhaust stroke, firing the incoming charge, which is forced back into the carbureter. If feeding more gasoline does not correct the trouble, look for carbon.

The common causes of sudden stopping are: empty gasoline tank, water in gasoline, flooded carbureter, dirt in carbureter or feed piping, wire loose, contact point obstructed, short circuit, overheating or gas mixture too lean. Sudden stopping could result from a broken camshaft or camshaft gear, but this cause is unlikely. Ninety-nine times out of a hundred the trouble is lack of gasoline or faulty ignition. Care should always be taken to run down the





cause, even though the engine may start again readily, for it may be the forerunner of more serious trouble.

The knock caused by carbon in the combustion chamber is a clear, hollow sound, most noticeable when the engine is heated, and there is also a sharp rap when the throttle is suddenly advanced. The knock from advancing the spark too far is dull. The knock from a loose connecting-rod bearing has a metallic sound like the rap of a small hammer on steel, but not so distinct. The knock from a crankshaft bearing is a dull thud.

Remember the four essentials are good spark, good fuel, good lubricating oil and lots of circulating water. Always see that they are where they are needed.

Don't forget to open the seacock of the water intake before starting. This is a more common cause of trouble than is generally supposed. Keep your ignition points clean. When putting in a new spark plug remember you may want to get it out some day. If the water pump is not working properly, stop the engine at once. Too much oil is as bad as not enough. Keep your hands off the carburetor and magneto unless it is absolutely necessary. They are delicate instruments and should not be tampered with, particularly by the inexperienced. Before touching either carburetor or magneto read the manufacturer's instructions which accompany the engine. Strain your gasoline before putting it in the tank. Never measure it with a dirty stick, nor by the light of a match. Clean the tank occasionally. Keep your boat supplied with a good set of tools.

Start the engine on gasoline, as previously explained. Switch from the battery to magneto and open the water dip valve. When the engine has been running long enough for the exhaust manifold to have become thoroughly heated, gradually open the kerosene valve, and shut off the supply of gasoline. If the boat is to be used on salt water it will be necessary to have a small fresh water tank to supply the water dip valve.

In changing from gasoline to kerosene or vice versa it will not be necessary to shut off the fuel valve on the supply pipe of the carburetor that is not working, but on long runs operating on kerosene it is advisable to shut off the

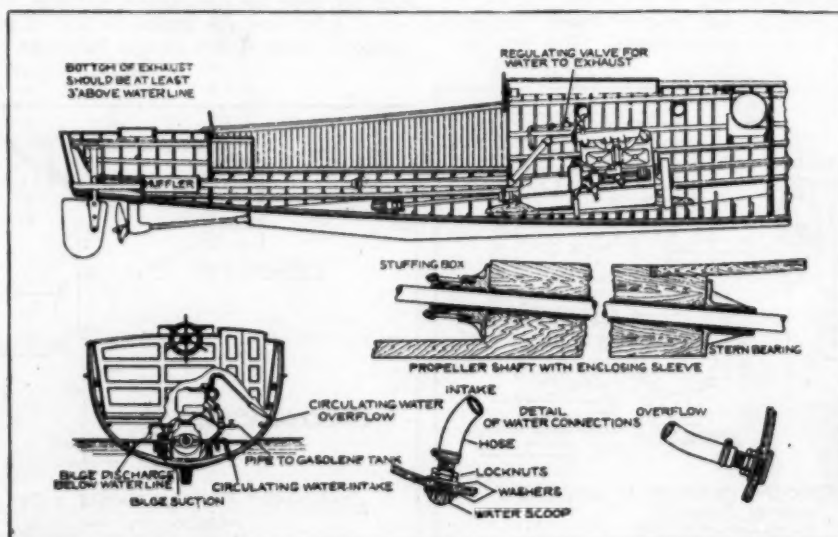
fuel line leading to the gasoline carburetor to safeguard against possibility of a leak of the float valve of the gasoline carburetor. Always start the engine on gasoline and use gasoline for all maneuvering, such as slow running, landing and leaving dock, and only open up the kerosene throttle after the clutch has been thrown in and the boat is under way. The water dip can be turned on as soon as the engine is started, for in some cases the kerosene device will heat the gasoline to a point of pre-ignition in the cylinder, but the adjustment of the water dip valve to a point where premature ignition and knocking stops must, of course, be done when the engine is operating on kerosene and under load, by giving the engine just enough water to remedy the trouble. Too much water causes loss of power.

When stopping the engine, gradually close the kerosene throttle and open up gasoline throttle simultaneously. Then allow engine to run long enough to use up all kerosene in vaporizer and operate on gasoline, next shut off the water dip valve, after this the engine can be stopped, as previously explained. The same directions apply to slowing down or starting, always do it on gasoline, for at slow speed the amount of heat is not sufficient for the proper vaporization of kerosene. Do not run any cooling water into exhaust piping within at least 2 feet of the kerosene device. If the heat from the manifold or piping is objectionable, cover it with asbestos.

The carburetor should never be adjusted unless it is absolutely necessary, and then it should only be attempted by someone of experience, for carburetor adjustment is really an art. If, however, a user is confronted with the necessity of adjusting his carburetor, we would strongly advise him to take his instructions from the book supplied by the manufacturers of his carburetor, which gives direc-

tions covering the particular instrument which he has, and treats the matter at greater length than space will allow us. We will, however, try to give some suggestions as to carburetor adjustment for the gasoline carburetors.

Open the gasoline throttle about half way and close the kerosene throttle entirely. Turn gasoline supply valve on and (Continued on page 78)

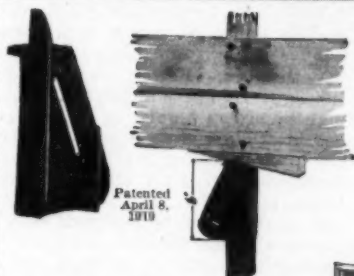


The proper installation of the motor is very important

# New Things for Motor Boatmen

Each month new parts, attachments, and fittings, interesting and invaluable to owners of large and small motor boats, are added to the devices already on the market. Announcements of these articles come to us in such numbers that in order to introduce all of them to our readers we have been obliged to omit descrip-

tions and publish only illustrations with short explanatory captions. In doing this, however, we urgently invite our readers to write us for complete information, as we shall take the greatest pleasure in providing it, together with the name and address of the manufacturers from whom the products may be obtained.

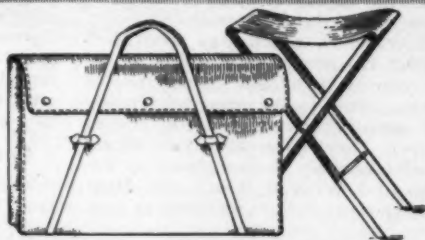


Patented  
April 8,  
1919

Here is an indestructible time saving device for boatmen and builders. This clamp, having no chains or screws, is quickly adjusted to timbers and carlins 1 to 2 inches inclusive. It will not injure the timbers; may be used up or down and at turn of bilge



Handles and covers of surface switches frequently come off, causing considerable annoyance and inconvenience. This new surface type tumbler switch eliminates this sort of trouble. The arching shape of the cover helps to protect the mechanism as well as adds to the appearance



A small and convenient accessory on camping trips or landings on the beach is this camp stool carrying case. It is made of water-proof fabrikoid which has the appearance and wearing qualities of genuine leather. The cost of this is very small



Built on the pipe-organ principle this exhaust horn gives a signal that is pleasing to the ear and does not frighten. Yet it is effective for both long and short distances. It cannot clog; has no wires or batteries, and is easy to install, and has no cost of upkeep



This trap ventilator was designed to furnish a simple and efficient means of ventilating a boat at all times. It is so constructed that all driving rain or spray is trapped and carried out on deck, while the air has a free passage at the time when it is most needed

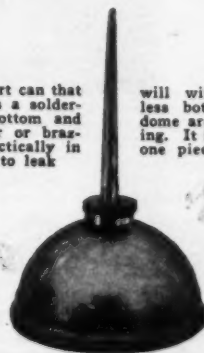


This anchor is made from a high grade of refined malleable iron, heavily galvanized, and is capable of enduring hard usage. For convenience in storing both flukes and stocks fold closely to the shank and are easily locked, either open or closed by a tough steel pin

Afraid to walk under a paint pot? Most of us avoid doing so in fear of a poorly fastened paint pot spilling its contents on us, but the pot can't fall when fastened with this hook, small and handy to carry



Here is a squirt can that abuse. It has a solder-oiler. The bottom and cement, solder or brazing that it is practically anteed not to leak



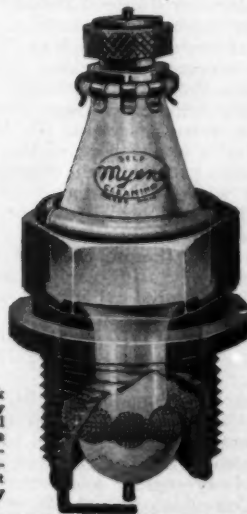
will withstand unusual less bottom and collar dome are put in without ing. It is so constructed one piece. It is guar-



This improved ignition plug is a starting device for engines of the surface ignition or semi-Diesel type. It is designed to eliminate delay in starting engines by the dangerous and slow blow torch method



This time switch will turn lights on and off, start and stop motors and will control any electric circuit where the time element is essential. Requires only five minutes attention a week



A self-cleaning spark plug is this. It really works. Is practical and has reached the point in its development where the manufacturer will back it with a liberal guaranty

Do not fail to write to the editor if you desire information concerning any of the above new things



## New Manhattan Offices for Lawrence Co.

**L.** LAWRENCE & CO., owners and proprietors of the Lawrence Patent Process for restoring scored or defective cylinders, have just opened general offices in the Woolworth Bldg., New York City, under the management of J. K. Lawrence, son of the founder and inventor. This company, which was established in 1862, has grown very rapidly in the last year or two, now having twelve service plants in the principal boating and motoring centers of the United States. They have also just established Canadian service plants at Toronto and Windsor, Ont., and Montreal, Quebec, and are planning to soon

## Yard and Shop

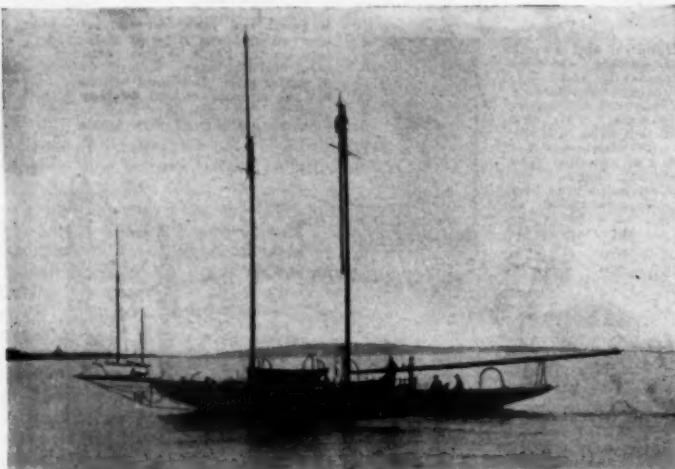
Notes of Interest to Both  
Owner and Manufacturer

lina Island, San Diego and Santa Barbara, Calif. This project involves the use of land machines from Los Angeles and Pasadena to San Diego and flying boats to Catalina. Recognizing the advantage of the combination of speed boats with airplanes, Chaplin obtained the Speedway agency and several boats are to be shipped to the coast in a short time.

### New Clay Distributors

The Clay Engine Mfg. Co., of Cleveland, O., announce the appointment of

Walter L. Masters & Co., State St., Chicago, Ill., as central western distributors for Clay heavy-duty marine engines, to cover territory tributary to Lake



*Cygnet, 75 feet long overall, 46 feet at waterline, 15-foot beam, 10½ feet draft, is a schooner yacht, designed and built by the Herreshoff Mfg. Co., Inc., Bristol, R. I., for Earl Kimball, of Providence, R. I. Powered with a four-cylinder, 20 h.p. Sterling motor, a speed of 6¾ statute m.p.h. is maintained*

open plants in England and France.

Difficulties of war-time production and the demand for conservation of materials probably accelerated the popularizing of the Lawrence Process in the automotive industries, as many manufacturers of high-grade marine and automobile engines found this process thoroughly satisfactory in repairing cylinder castings which show slight defects, such as air holes and sand pits in the bore of the cylinder. By this process such defects can be filled with a silver-nickel alloy, electrically fused, which can then be machined as exactly as a perfect casting. This use of the process has been found as effective as its original purpose of repairing scored cylinders.

### Sidney Chaplin Selling Motors

Charlie Chaplin's brother Sidney, himself a well-known film star, is to act not only for the films henceforth, but also as the Pacific Coast agent for Speedway engines and boats, built by the Consolidated Shipbuilding Corp., of Morris Heights, N. Y. Chaplin is interested with Emery Rogers, former flying instructor in the Army, in establishing an airplane route between Cata-

Michigan.

John McLeod, Jr., of Edgewater Station, Providence, R. I., has been appointed distributor for Clay engines in the Rhode Island Territory.

### New Anderson Leaflet

The Anderson Engine Co., of Chicago, are issuing an attractive new leaflet describing the many good points of the 4 h.p., 4½ x 5 four-cycle Anderson gasoline engine, which is sold for \$200, F.O.B. Chicago. This engine has been on the market for over ten years, and some of the very first ones are still

giving good service. It is easy to operate, economical to run and safe to buy. The specifications of the engine are given in detail in the leaflet, with a description of its superior features.

### Government Regulations Explained

The Evinrude Motor Co., of Milwaukee, Wis., under the above heading are issuing a leaflet for the information and guidance of motor boat owners. This leaflet explains the new war excise tax, the special license tax, the regulations governing the numbering of boats, and the orders regulating the operation of Evinrude equipped boats. According to the company, craft equipped with Evinrude motors are classed as power boats, under the Act of June 9, 1910, and as such must be equipped with life preservers, one for each occupant; fire extinguisher, whistle or horn, red and green bow lamps, white stern lamp and two sets of pilot rules, all of which equipment is furnished by the Evinrude company.

The latest catalog of the Evinrude people, a handsome brochure with a lively marine scene on the cover in deeply contrasting colors of black, white, red, and blue, has just been issued. This catalog is crammed with valuable information for Evinrude owners and prospective purchasers of outboard motors, whether it be for pleasure or commercial craft. Types of craft on which Evinrude motors are in use profusely illustrate the catalog. These illustrations include Evinrude boats in all parts of the world. Information as to the design, construction



*Another Santa Maria is Eleanor II, built for Dr. Hamilton K. Rice, of Boston, who is to use her on a trip of exploration in the uncharted and almost impenetrable wilds of the Rio Negro regions of Brazil. The Doctor, his wife, and three assistants will live on her for a whole year. She was designed and built by the Consolidated Shipbuilding Corp. of Morris Heights, N. Y.*

and operation of the motors is given in detail.

### Further Navy Sales

The Bureau of Supplies and Accounts of the Navy Department will receive bids for motor boats. Those to be disposed of include: Coronet, S. P. 194, a motor yacht, built in 1905,

length 90 feet, beam 14 feet, draft 4 feet 6 inches, has one 20th century engine, 150 h.p., speed 13 knots, 57 tons gross. Present location, Marine Basin, New York. Bids will be received for this craft until noon August 5.

Four steam yachts, Arcady, a 116-footer; Druid, a 217-footer; Joyance, a 134-footer, and Reposo, a 126-footer, will also be sold at the same time.

The motor boat Alice, S. P. 367, built in 1913, length 60 feet, beam 10 feet 10 inches, draft 3 feet, speed 16.5 knots, 120-160 h.p., 20 tons gross, with two six-cylinder, four-cycle engines, and the motor boat, Coco, S. P. 110, built in 1917, length 36 feet, beam 9 feet, draft 2 feet 5 inches, speed 26 knots, 150 h.p., 6 tons gross, with a six-cylinder, Sterling engine, are to be disposed of at noon August 4. Alice is in the Marine Basin, New York, and Coco is at Key West, Fla.

### Danish Motor Agent Visits U. S.

Perhaps it would be more correct to say that the "Danish Motor Agent" really visited the Universal Motor Co., of Oshkosh, Wis., rather than to say he visited "us", for that is just what Friis Hansen, of Copenhagen did. Mr. Hansen, who has for some time been distributing Universal marine engines, recently made his annual visit to "U. S.", and before leaving New York, he decided to run over to Oshkosh to visit the Universal plant.

But—well, as travelers from across the "pond" have admitted heretofore, this is some country, and having wired that he would be on the way Mr. Hansen was not one to back out when he found how far he had shot his arrow. So, the pleasure of a two-hours' visit in Oshkosh was sandwiched in between the twenty-four hours each way in making the trip. Mr. Hansen reports things booming in his country and the demand for American products growing louder and more insistent.

### Toot—Toot

R. W. Zundel & Co., of 47 Whitehall St., New York, are offering a six-volt marine horn shown in one of the illustrations on page 42 which is fast becoming very popular. This horn combines a distinctive marine appearance with a coarse heavy tone that disguises the 20-footer, and gives the impression that a Sound steamer is approaching.



Kruson, owned by Chas. J. Allen, of the Pensacola Yacht Club, is powered with a 12 h.p. Kermath engine that Mr. Allen picked up second-hand. He overhauled it and with his snappy little boat makes 9 m.p.h. This second-hand motor has given such satisfaction that Mr. Allen is to replace it with a 20 h.p. Kermath

The horn is of the vibrator type and is non-arching, the current consumption being reduced to a minimum. It has a black enamel base with a highly polished brass projector for salt water use. Its height overall is 10 inches, with a 4-inch base and it weighs 2½ pounds.

### New Sales Manager for Michigan Machine Co.

H. E. Henry, formerly sales manager of the Fulflo Pump Co., of Blanchester, O., has accepted the position of sales manager of the Michigan Machine Co., Detroit. This company will manufacture a complete line of pumps ranging in sizes from ¼ inch intake and discharge to 2 inches intake and discharge. These pumps are designed primarily for use in connection with machines and tools, for cutting tool lubrication, force feed lubrication of bearings, also adaptable for oil circulation on marine engines, fuel systems of all kinds, brine circulation and numerous other uses.

### Crude Oil Engines of Semi-Diesel Type

The Jacobson marine semi-Diesel oil engine built by the Jacobson Gas Engine Co., of Albany, N. Y., is the result

of over thirty years' experience in the design, manufacture, and operation of internal combustion engines for use all over the world.

The Type BM engine illustrated we believe to be one of the simplest and most easily handled engines to be found on the American market. The engine operates practically on the common two-cycle principle. Great care has been taken to secure ample port areas and correct timing of the events in the cycle. The air inlet valves are automatic in their operation and

are specially designed to be silent in operation. The one great difference between the Jacobson engine and the common two-cycle gasoline engine is that the gasoline engine draws fuel into the crankcase with the air through the carbureter, but in the Jacobson oil engine pure air only is drawn into the crankcase and compressed and at the proper time passes into the working cylinders.

Fuel does not enter the combustion space until the pure air is compressed and then is injected as a fine spray into the cylinder and ignition head.

Ignition is secured when the finely divided fuel strikes the compressed air in the cylinder head which is hot, due both to the heat of compression and to the contact with the heated portion of the cylinder head, called the ignition head. The ignition head is specially constructed to heat the air charge readily and to remain at a uniform temperature.

From the foregoing it is clear that the two important elements of the air and ignition for the operation of the engine are automatic in operation and do not depend on mechanical or electrical features such as valves, magnetos, distributors, batteries or ignition for their successful and continuous functioning.

The final element into the operation of the engine is the fuel system. A mechanically operated fuel injection pump assures the success of this point. The pump is driven by cams mounted on the crankshaft very carefully timed in their operation and impossible to get out of time through careless replacement or adjustment of gears, chains, etc. The pumps themselves are carefully designed and built with long ground plungers and large, reliable valves. The pump is arranged so that it is readily get-at-able for adjustment or repair. The whole pump may be removed complete by unscrewing two unions and one cap screw.



Ethela, a 30-footer, with a beam of 6 feet 3 inches, is a runabout designed and built by the Pyke Motor & Yacht Co., of Montreal, Can., for Mr. Houghton, of Ottawa. It is in use on the Rideau Lake. The power is furnished by a Model FS four-cylinder, 90-100 h.p. Sterling motor, and Ethela has a speed of 32½ m.p.h.

Check valves are placed outside the pump, and may be replaced in a few minutes.

The fuel is injected into the cylinder through a fuel nozzle which thoroughly atomizes the fuel as it is forced into the combustion space.

The speed of the engine is controlled by a governor acting positively on the fuel pumps. The governor is of an improved design and is installed on the flywheel, giving a powerful and yet simple governor with the least possible tendency to get out of order.

The governor limits the maximum speed of the engine only and does not limit the load. It will prevent racing of the engine when the propeller flies out of the water in a sea way or when

changing from ahead to astern or in idling the engine.

The minimum speed of the load the engine carries is taken care of by a hand throttle, which gives a wide range of speed from about quarter speed to full rated speed. Reversing is accomplished by means of a heavily built clutch and reverse gear which is easily handled with minimum effort.

R. W. Zundel, Inc., 47 Whitehall St., New York City, have brought out a unique loud-sounding electric horn which has attracted great attention from boat owners. It is entirely water-proof and is said to be the only genuine marine type electric vibrator horn ever invented. The polished brass bell gives the appearance of a whistle and acts as a sounding board to multiply and radiate the sound vibration

The thrust bearings are enclosed at the after end of the engine and are either babbitted-grooved type or are designed with heavy-duty ball bearings. Thrusts are built to stand up under the hardest service.

Lubrication is by a combination of mechanical force feed for cylinder main and connecting rod bearings and thrust bearings, and grease in addition on the main bearings and thrusts. The oiling system has been made as nearly fool-proof as possible.

The cooling of the engine is secured by a plunger pump operating from the main shaft of the engine. Bilge and air pumps may also be fitted if desired.

We believe that the Jacobson marine oil engine is to be one of the best designed and simplest engines to be found on the market today, and that it will prove to be a thoroughly reliable and economical power plant for ship and tug owners and barge operator, the fisherman, etc.

A full line of sizes and styles for both stationary and marine uses are built for practically every requirement and those interested may obtain further information by writing the company direct at its main office in Buffalo, N. Y.



## The Sterling Line

The Sterling Engine Co., of Buffalo, N. Y., is issuing a shop magazine, The Sterling Line, on the first of each month in an effort to instill good fellowship among the employees and to foster even better workmanship. The magazine contains notes of interest to Sterling employees and dealers and is not intended for general publication.

## A Planking and Decking Clamp

Richard B. Chute, Jr., a well-known boat builder of Huntington, L. I., N. Y., has invented and had patented one of the most efficient devices for boat builders devised in some time. This is a planking and decking clamp which can be quickly adjusted for timber from 1 to 2 inches, inclusive. There are no chains or screws and the teeth are only 1-16 of an inch deep, but the clamp is so devised that they take a firm hold on the plank without marring the surface. The clamp can be used up or down and at the turn of the bilge.

## A Picturesque Canadian Cruise

For the cruising enthusiast who desires to take a new and picturesque cruise through an easily accessible part of Canada the trip to Lake Simcoe via the Trent Valley Canal offers a rare allure. One may leave Montreal and chug up to Lake Ontario through the picturesqueness of the Thousand Islands and thence through the Trent Valley Canal find his way into Lake Simcoe. A committee of Canadian Senators are endeavoring to popularize this route and are asking motor boat pioneers to blaze the way this season.

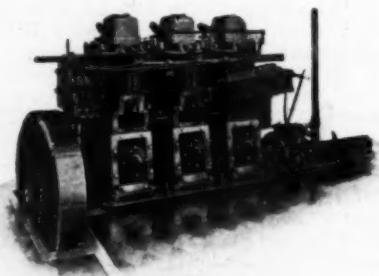
There is a minimum depth of six feet of water in the canal and the locks are open at practically all hours on week days and certain hours on Sundays. The length of the locks between hollow quoins is 134 feet and the width 33 feet. There are good hotels and telephone and telegraph systems along the route. One may reach Quebec over this picturesque water system, viewing many unusual sights. In 1920 motor boats will be able to go through to Georgian Bay.

## Motor Boats Change Owners

An exceptional number of motor-boats of all types have changed hands, the new owners of these craft having placed them in commission or hastening the fitting out of them. Among transactions recently effected by Cox & Stevens of New York are the following:—

Alacrity, a 118-foot fast, steel, twin-screw power yacht, sold for John H. Blodgett, of Boston, to Kenneth B. Van Riper, N. Y. Y. C., for general cruising and express service on Long Island Sound; Cristina, a 110-foot steel, twin-screw cruising power yacht, sold for Fred M. Kirby, of Wilkes-Barre, Pa., to Vincent Astor, N. Y. Y. C., for

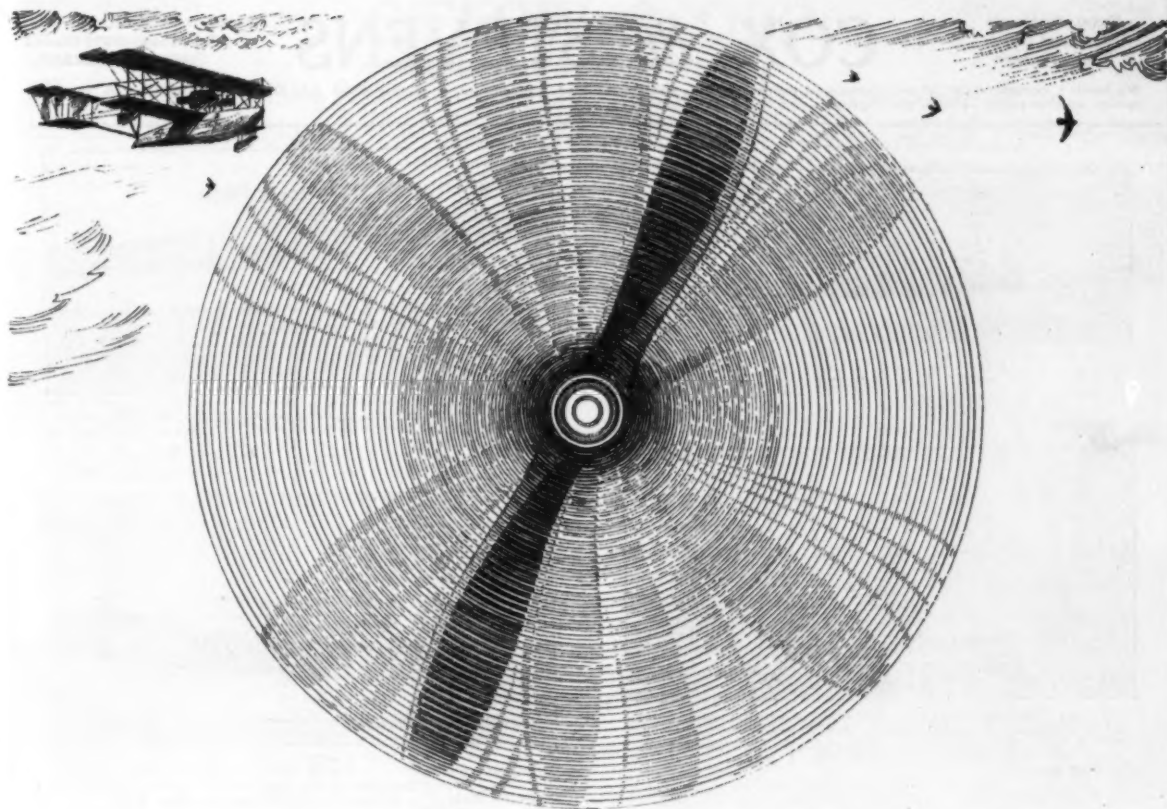
cruising on local waters; the 98-foot twin-screw cruising power yacht Turk, sold for Edward L. Welsh, of Philadelphia, to Frank C. Munson, of New York, for use on Long Island Sound; the 90-foot twin-screw cruising power yacht Desire, sold for Clifford D. Abeles, of New York, to a local yachtsman, for cruising on the St. Lawrence River; Everglades, a 120-foot gasoline houseboat, chartered for Colonel Robert M. Thompson, N. Y. Y. C., to a member of the New York Yacht Club; 84-foot cruising power yacht Luvina, sold for Herman Hollerith, of Washington, D. C., to Wilson P. Foss, of New York, for local cruising; Wissoe II, an 83-foot twin-screw cruising power yacht, sold for George Lauder Carnegie, N. Y. Y. C., to Bruce Dodson, Columbia Yacht Club. She has been re-named Clan and is now in commission on Long Island Sound; the 70-foot power yacht Thuban, sold for Charles Coryell, of Bay City, Mich., to A. E. Dowler, of New York, and resold to S. W. Rushmore, for cruising along North Atlantic Coast; the 75-foot twin-screw gasoline cruiser Arval, sold for Donald N. Test, of Indianapolis, Ind., to Charles Coryell, for use on the Great Lakes; the 70-foot fast power yacht Hoqua, sold for Robert M. Curtiss, of Chicago, to a Western yachtsman; the 96-foot twin-screw power yacht Lady Mary, sold for B. E. Niese, of New York, to a Western yachtsman, in conjunction with E. B. Jones; the 96-foot auxiliary schooner yacht Fedalma, sold for H. Francis Dyruff, of New York, to Jan G. Palm, of Curacao, D. W. I., for commercial service; Mystery, a 60-foot twin-screw, high-speed power boat, sold for Mrs. M. Work Hewitt, of Tuxedo, N. Y., to Dutee Wilcox Flint, N. Y. Y. C. She has been re-named Thorobred and will be used



This semi-Diesel crude-oil engine embodies the experience and experiments of over twenty-five years. It is made by the Jacobson Gas Engine Co., of Albany, N. Y. They have produced an engine that for smoothness of running and close regulation in a twin-cylinder engine that is said to be equal to a double-acting steam engine

for express service on Narragansett Bay; the 90-foot overall auxiliary schooner Scotia, sold for Jefferson Williams, of New York, to C. J. Horgen, of Brooklyn, N. Y.; Ocoee, 68-foot gasoline yacht, sold for H. W. & R. G. Blumenthal, of New York, to L. M. Mowbray, of Brooklyn, N. Y.; Elithro II, 55-foot gasoline yacht, sold for J. K. Robinson, Jr., of New York.





## The most terrific varnish test in history!

700 miles an hour for 26 hours—and Valspar won

**D**URING the trans-Atlantic flight of the NC-4 the strain on her huge Valsparred propellers was *terrific*.

The big blades, whizzing at 1800 revolutions a minute, attained at their tips the frightful speed of 700 miles per hour—a speed at which the drops of moisture striking their Valsparred surface had the impact of buckshot.

This amazing propeller speed was maintained throughout the entire 26 hours of trans-Atlantic flight—all the way from Newfoundland to Portugal—through blinding fog and mist.

Never yet has any varnish been called on to undergo such a terrific test. Had even a very little water penetrated the varnish, the tips of the blades would have begun to "fray." Then the laminated strips would have swelled and separated and the blades of the propel-

lers would literally have flown to pieces, landing the NC-4 on the ocean, helpless.

But Valspar protected these laminated propeller blades perfectly, as it did all other varnished parts of the NC-4.

Valspar's toughness, elasticity and waterproofness *made good* for the U. S. Navy in this severe trial. It is the one varnish that can be *absolutely depended upon* under all conditions of service.

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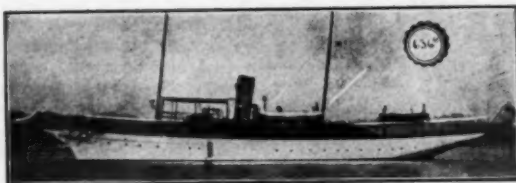
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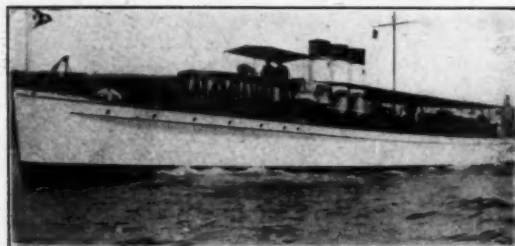
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No. 636—For Sale or Charter—Modern 150 ft. steel steam yacht; most desirable of type and size available. Excellent accommodation; good speed. First class condition. Cox & Stevens, 15 William Street, New York.



No. 1215—For Sale or Charter—(in Commission)—very attractive high speed twin screw steam yacht 140 ft. overall. Speed up to 27 miles. Construction, equipment, etc., highest grade. Deck dining saloon, two staterooms, bathroom, two toilets, etc. Low figure will be accepted for prompt disposal. Cox & Stevens, 15 William Street, New York. Telephone 1375 Broad.



No. 148—For Sale—Steel, flush deck, steam auxiliary schooner yacht; 130 ft. overall, 110 ft. waterline, 26 ft. beam, 15.6 ft. draft. Speed under power 9 knots; compound engine; electric lights; all conveniences. Extremely able craft; heavily constructed. Cox & Stevens, 15 William St., New York.



No. 1796—For Sale or Charter—Very roomy, twin screw cruising power yacht, 99 x 17 x 4 ft. Speed 13 to 15 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms, all conveniences. Cox & Stevens, 15 William St., New York.



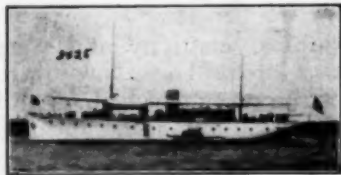
No. 3068—For Sale—Desirable twin screw power yacht; 84 x 14 x 4 ft. Speed up to 14 miles; two 6 cyl. 70 H.P. "20th Century" motors. Two double staterooms, saloon, bath and 2 toilets, etc. Price low. Cox & Stevens, 15 William Street, New York.



No. 154—For Sale—Modern 130 ft., flush deck steam yacht. Speed 14 knots; triple expansion engine. Dining saloon and smoking room on deck, 4 staterooms, 2 baths, three toilets, etc. Excellent condition. Price low. Cox & Stevens, 15 William St., New York.



No. 3427—For Sale at Low Figure—Fast, roomy, twin screw cruising power yacht; 74 x 14 x 3.9 ft. New 1916; Lawley built. Speed up to 16 miles; two 6 cyl. "Speedway" motors. Large saloon, three staterooms, shower bath, etc. Cox & Stevens, 15 William Street, New York.



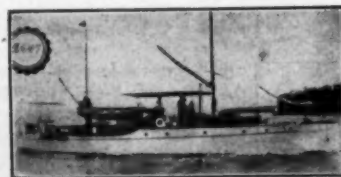
No. 2425—For Sale or Charter—Twin screw cruising power yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60/90 H.P. motors. Excellent accommodation. Now in commission. Cox & Stevens, 15 William Street, New York.



No. 3426—For Sale—High speed twin screw bridge deck cruiser; 60 x 10.9 x 3 ft. Built by Lawley 1916. Two 8-cylinder Van Blerck motors; 200 H.P. each; speed up to 27 miles. Double stateroom, saloon, galley, bath, etc. Handsomely finished. Low price. Cox & Stevens, 15 William St., N. Y.



No. 3560—For Sale—Fast bridge deck cruiser; 55 x 8.9 x 3 ft. Speed up to 23 miles; 8 cyl., 200 H.P. Speedway motor. Two berths in cabin, toilet room, large cockpit, etc. Price attractive. Cox & Stevens, 15 William St., New York.



No. 2547—For Sale—Handsome, modern, exceptionally able gasoline cruiser; 64 x 12.6 x 4 ft. Speed 11½ miles; 60 H.P. 6-cylinder heavy duty motor controlled from bridge. Main saloon, toilet and separate galley forward; engine room amidships; double and single stateroom and bathroom aft. Cox & Stevens, 15 William St., N. Y.



No. 627—For Sale—Attractive Lawley Built Day Boat; 53.5 x 10.3 x 3 ft. Speed 11 miles; 32/37 H.P. Standard motor. Best construction. Sleep 4 comfortably. Large cockpit. Low price. Cox & Stevens, 15 William St., New York.



No. 3560—For Sale—Fast Bridge deck cruiser; 45 x 10.6 x 3.6 ft. New 1917. Speed 18 miles; 125 H.P. 6 cyl. Sterling motor. Double stateroom, saloon, galley, toilet room, etc. Price reasonable. Cox & Stevens, 15 William Street, New York.

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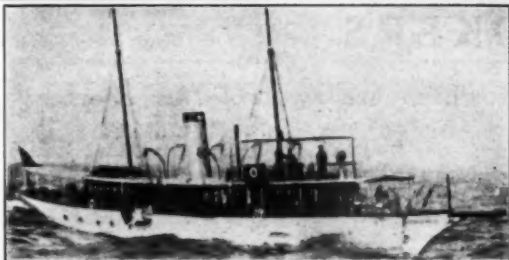
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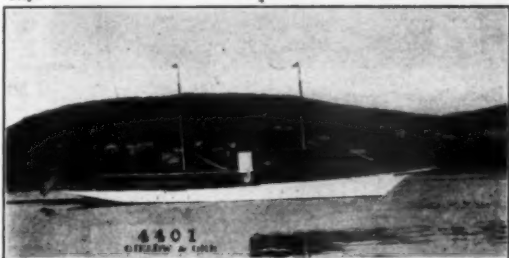
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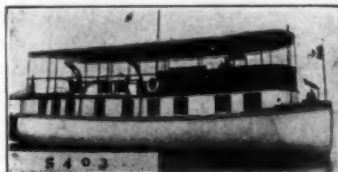
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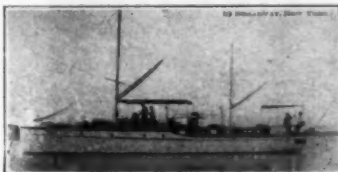
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No. 4401—For Sale—137 ft. very attractive twin screw motor yacht. Speed 15 to 16 miles. Built by Lawley. Deck dining room and smoking room. Three double staterooms. Hot water heated. Price attractive. Gielow & Orr, 52 Broadway, New York City.



No. 5403—For Charter—Desirable 51 foot houseboat. Standard Motor. Large deck space. Two double and two single staterooms. Electric lights. Accommodations for seven persons. Gielow & Orr, 52 Broadway, New York City.



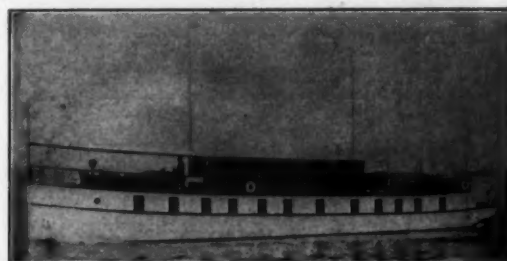
No. 4606—For Sale—Very able 64 foot cruiser, 28 ft. 6 in. beam, 4 ft. draft, 6 cyl., Heavy Duty motor new last year. Speed 10 knots. One double one single stateroom opposite main saloon. Accommodate five persons. Boat heavily built, especially for offshore cruising. Price reasonable. Gielow & Orr, 52 Broadway, New York City.



No. 3307—For Sale—Desirable 59 foot cruising power yacht. Standard engine. Double stateroom. Good sea boat, inspectable New York, price attractive. Gielow & Orr, 52 Broadway, New York City.



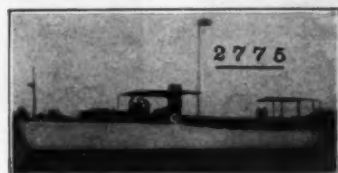
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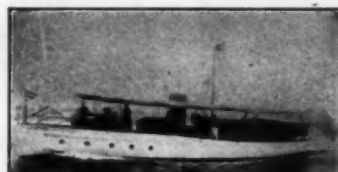
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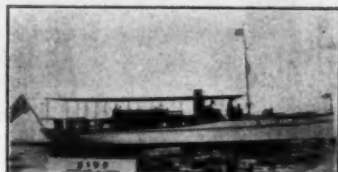
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No. 5199—For Sale—Most desirable 60 ft. cruising power yacht. Now in full commission. Speed 13 to 14 miles. One double stateroom. Price attractive. Gielow & Orr, 52 Broadway, New York City.



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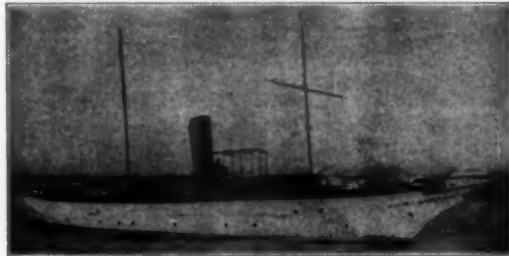
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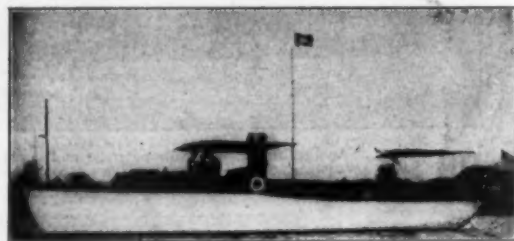
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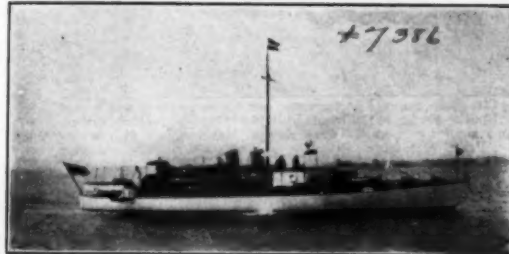
No. 51—For Sale—Price Attractive—Steam yacht, 115 ft. x 95 ft. x 15 ft. 6 in. x 5 ft. 5 in. draft. Built 1903. Triple Expansion Engines, Seabury Boiler, new 1913. 4 staterooms and two saloons.



No. 7987—Sale—Charter—106 ft. cruising motor yacht; speed 13 knots; 4 staterooms, bathroom, main saloon, deck dining saloon, etc. Full equipment.



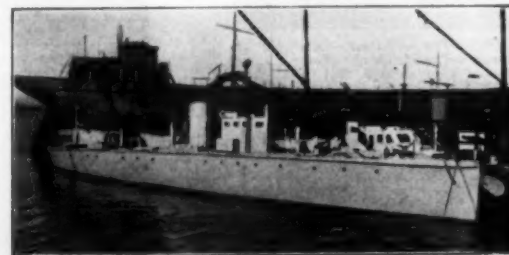
No. 7717—Sale—Charter—Raised Deck Cruiser, 60 ft. x 11 ft. x 3 ft. 6 in. 50 H.P. Speedway motor. Saloon, stateroom, galley, etc.



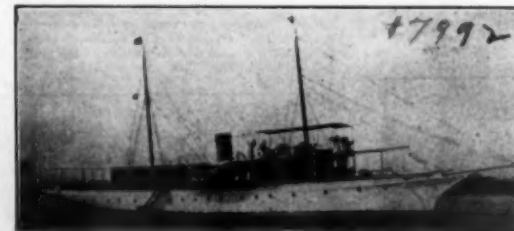
No. 7386—For Sale—Price attractive. 75 foot motor yacht, 6 cylinder 100 H.P. Standard motor. Good cabin accommodations.



No. 7001—Sale Desirable shoal draft cruiser, 33 ft x 10 ft. 6 in. x 2 ft. 6 in. draft. Built 1917. 25 H.P. Sterling motor. Speed 12 miles.



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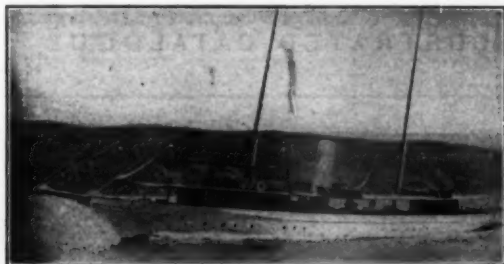
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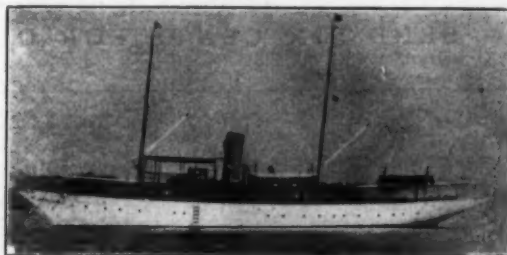
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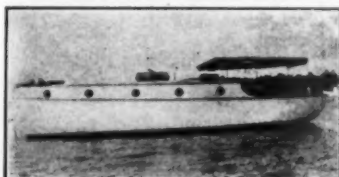
No. 584—For Sale or Charter—Attractive 150 ft. steel steam yacht. Excellent accommodations. A-1 condition.



No. 2093—For Sale—Power cruiser, 75 ft. x 14 ft. x 4 ft. 6 in. Sterling engine. Deck dining saloon, large main saloon, two state rooms, bathroom, etc.



No. 2334—For Sale—New twin screw express cruiser, 85 x 14.3 x 4.3. Van Blerck engines. Speed up to 21 miles. Reasonable price.



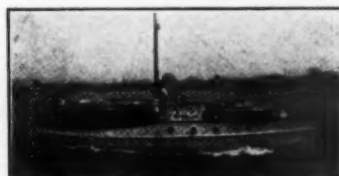
No. 2441—For Sale—Raised deck cruiser, 35 ft. x 10 ft. x 2 ft. 10 in. Four cylinder. 24 H.P. Lamb engine. Sleeps five comfortably. Price reasonable.



No. 1736—For Sale—Twin screw power yacht, 97 ft. x 16 ft. 7 in. x 3 ft. 6 in. 4 staterooms, bath room, deck dining saloon, etc.



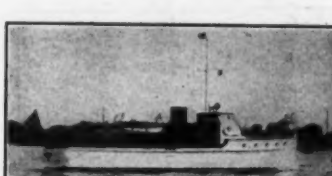
No. 2167—For Sale—Power boat, 50 ft. x 11 ft. x 3 ft. 6 in. Fitted with Sterling engine. Large accommodation.



No. 1458—Raised deck cruiser, with bridge. 50 ft. x 11 ft. x 3 ft. 9 in.; fitted with 50 H.P. Balabo motor; speed, 10 knots; sleeps 4 in Owner's party; Galley, two toilets, etc.



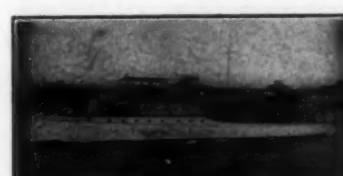
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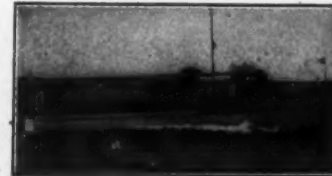
No. 2386—New patrol type, 54 ft. x 11 ft. 2 in. eight cylinder Van Blerck, speed 17 miles.



No. 2136—For Sale—Motor yacht, 65 x 14 x 4. 20th Century motor; speed 12 miles. Practically in commission, excellent condition. Price low.



No. 1738—Raised Deck Cruiser, 65 ft. x 11 ft., six cylinder motor. good accommodation.



No. 2351—For Sale—55-foot twin screw Express Cruiser. Has 2 staterooms, galley, etc. Two 200 h.p., each 8-cylinder Van Blerck engines; speed 25 to 27 miles.

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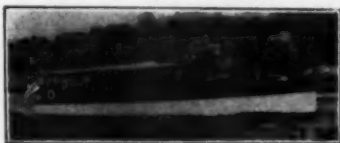
AMERICAN AND FOREIGN YACHTS  
Merchant Vessels for Sale and Charter

No. 1 Broadway New York City

Surveying  
Marine Insurance

Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. Our knowledge of the yachts we offer, and our 25 years' experience in the business insure satisfaction to any one buying or chartering a yacht through this office

SEND SIX CENTS FOR OUR ILLUSTRATED CATALOGUE



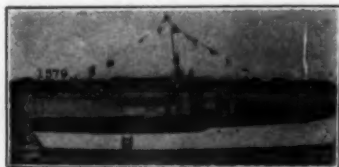
2058—55 foot express day cruiser. Two berths in cabin, toilet, etc. Speed 20-23 miles.



1443—110 foot twin screw power yacht. Five staterooms, dining saloon, baths, etc. Speed 11-12 Knots.



2057—45 foot Elco cruiser. Double stateroom, saloon, two toilets, etc. Sleeps 8 people. Speed 10 1/2 miles.



1579—55 foot cruiser. Double stateroom, main cabin and forward cabin. Sleeps 6 people. Speed 11 miles.



1688—45 foot cruiser. Double stateroom, main cabin, toilet, etc. Speed 10 miles.



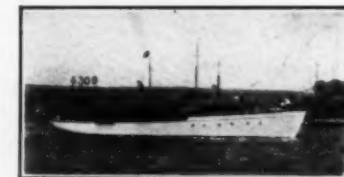
1389—90 foot twin screw power yacht. Three staterooms, main saloon, bath, etc. Speed 12-14 miles.



1860—60 foot twin screw express cruiser. Speed up to 23 miles.



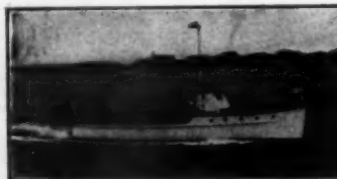
2040—70 foot twin screw power yacht. Three staterooms. Dining saloon, bath, etc. Speed 13-14 miles.



4309—Sale or charter 100 foot steam yacht. Two double staterooms, main saloon, dining saloon, etc. Speed 13 miles.



1966—50 foot cruiser. Double stateroom and cabin sleeps four people. Speed 12 miles.



1913—55 foot express cruiser. Stateroom, forward cabin and after cabin, two toilets, etc. Speed 17 miles.



4021—120 foot twin screw express steam yacht. Double stateroom, main saloon, dining saloon, etc. Speed up to 27 miles.



1620—47 foot express V bottom cruiser. Sleeps six people. Speed 18 miles.



4270—Keel schooner 105' x 73' x 18' 6" x 11' 3". Three double staterooms, main saloon, bath, etc. Splendid proposition.



848—75 foot cruiser. Two double staterooms, main saloon, bath, etc. Standard motor. Speed 12 miles.



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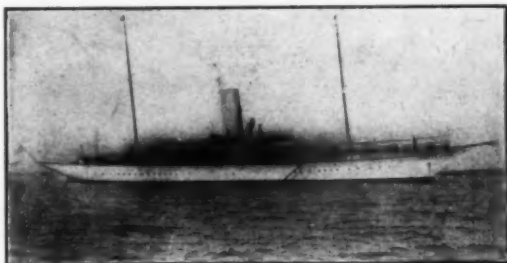
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Naval Architecture  
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# FRANK BOWNE JONES

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29 BROADWAY NEW YORK

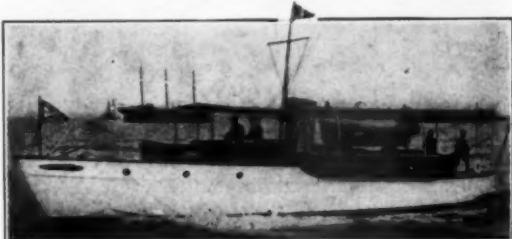
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No. 5664—Ocean Going Steam Yacht—1,800 tons—length 310 ft.—twin screw. One of the largest and finest steam yachts ever built. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



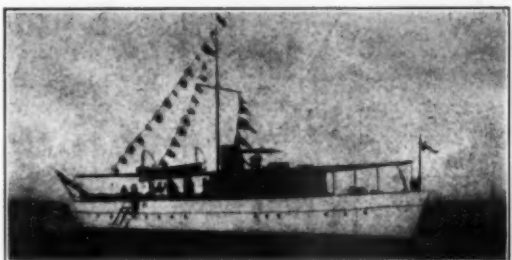
No. 6817—Express Steam Yacht; length 140 ft.; speed over 30 miles; Twin Screw; of the best design and build. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



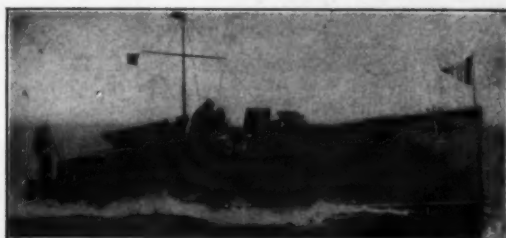
No. 2278—55 ft. Gasoline Cruiser; double stateroom and saloon; 30/40 H.P. engine; of good design and build. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



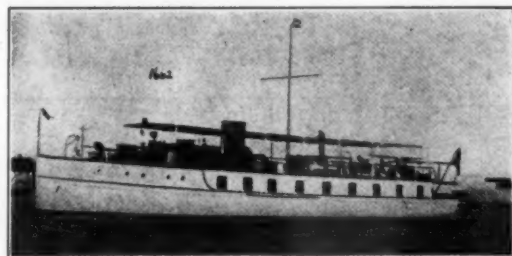
No. 4555—65 ft. Gasoline Cruiser; 14 ft. beam; 6 cylinder engine; good speed; excellent accommodations; deliver in commission. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



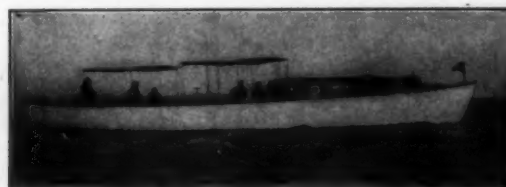
No. 6243—90 ft. Gasoline Cruiser; flush deck; twin screw; 4 staterooms; saloon, bath, etc. Reasonable price. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



No. 1071—60 ft. Express Cruiser; built 1916; twin screw; Van Blerck motors; speed 25 knots. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



No. 5997—For Charter—Attractive 90 ft. twin screw gasoline houseboat; speed 10/12 miles; large saloon, four staterooms, two bathrooms; all conveniences; handsomely furnished. FRANK BOWNE JONES, Agent, 29 Broadway, New York.



No. 5977—50 ft. Day Boat; Lawley build; New Standard motor; speed 12 miles. FRANK BOWNE JONES, Agent, 29 Broadway, New York.

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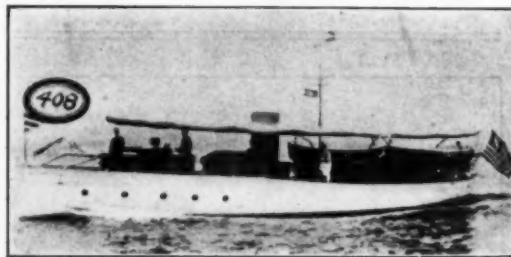
Naval Architects, Yacht Brokers, Surveying, Marine Insurance

We have a complete list of all Steam and Power Yachts, Auxiliaries and Houseboats which are offered for sale and charter.

Plans, Photographs and full particulars furnished on request.



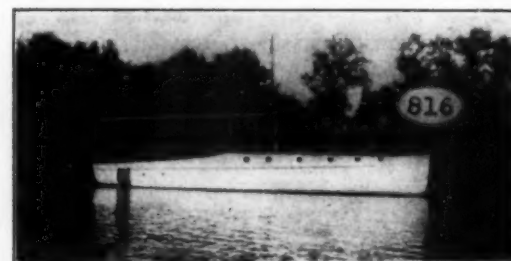
No. 118—For Sale—Twin screw steel steam yacht. 227 ft. x 24 ft. 6 in. x 10 ft. draft. Five single and two double staterooms. Four bathrooms. Two-deckhouses containing dining saloon and social hall. Speed up to 22 knots.



No. 408—For Sale—65' Bridge deck cruiser. Built 1915. Comfortable and spacious accommodations with large amount of deck space. Cruising speed 12 miles.



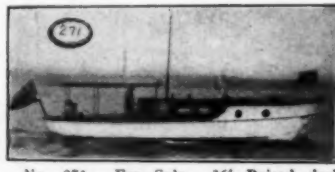
No. 891—For Sale—138 ft. steel steam yacht. 17' 6" beam, 7' 6" draft. Two double, two single staterooms, two baths and toilets. Dining saloon and social hall on deck. Fittings throughout of the very best. New boilers and engine in 1916. In excellent condition throughout.



No. 816—For Sale—45' Bridge deck cruiser. Heavily built. Two double staterooms. Sterling motor with self-starter. A modern boat throughout. Now in commission on Great Lakes.



No. 32—For Sale—99' twin screw gasoline yacht. In splendid condition and makes a desirable boat for extended cruises. Two double and four single staterooms, three bathrooms. Now in commission. Speed 13 to 15 miles.



No. 271—For Sale—36' Raised deck cruiser. Large comfortable cockpit. Will sleep six. Sterling motor.



No. 431—For Sale—85' Power Yacht. Two double, one single stateroom. Has just been rearranged and refinished throughout. Location on Great Lakes.



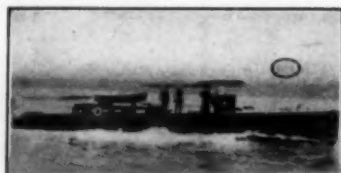
No. 38—For Sale—78' Power yacht. Lawley built. Two double staterooms. A very able seaboat.



No. 877—For Sale—58' twin screw express cruiser. Built 1917. Beautifully finished and furnished. Two double staterooms. Two eight cylinder Van Blerck engines. Speed up to 27 miles.



No. 413—For Sale—85' twin screw steel gasoline yacht. Two double, one single staterooms, also bathroom. Speedway motors. An excellent seaboat and comfortable cruiser.



No. 2136—For Sale—Motor yacht, 65 x Day Cruiser. Built 1916. Van Blerck motors. Cruising speed 18 miles and maximum 20. Motors controlled from bridge. Low price.



No. 546—For Sale—Attractive bridge deck power cruiser. 65' x 13' x 4'8" draft. Thoroughly modern and splendid seaboat. Bargain for immediate sale.



No. 560—For Sale—75' gasoline cruiser. Built 1915. Sterling motor. Very able boat with excellent accommodations. Attractively priced for quick sale. Location on Great Lakes.

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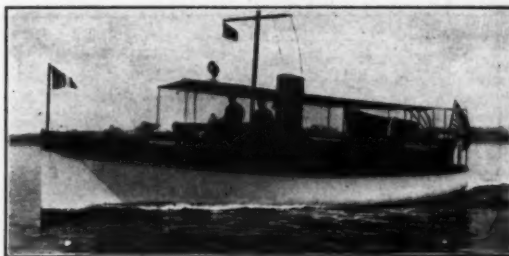
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Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offer of the month. Please mention MoToR Boating.



For Sale—Steamer Poinsettia—Built of Lee County Pine at Ft. Myers, Florida, in 1915. Everything new. Hull 70 ft. long x 21½ ft. beam x 4 10/12 ft. deep. Draws 30 inches. Built for coasting trade. Machinery built by Chicago Marine Iron Works in 1915. Scotch waterback boiler 7 ft. diam. x 9 ft. long. 2—Piston valve engines—8 in. bore x 3½ ft. stroke. Condensing outfit and pumps complete. Equipped for Freight—Passengers and Touring. For price—Call on or write to B. F. Hall, Jr., P.O. Box 181, Okeechobee, Fla.



183.—Here is an opportunity to Purchase or Charter the Finest 50 Foot Gasoline Yacht ever offered. Built 1915, by Luders. Owner's quarters provide double stateroom and large main saloon, beautifully finished in finest mahogany and white. 65-85 h.p. Van Blerck 6 cylinder motor installed new, 1916, and fitted with electric self starter 1918, gives speed of 13 miles per hour (actual). All controls on bridge. Finest and most complete cruising inventory. Whole outfit good as new. An unusually able seaboat and capable of any sort cruising. In commission and ready for immediate delivery. Address SIMON FISCH, Yacht Broker, 31 East 27th Street, New York. Telephone Madison Square 4008.

**SALE OF U. S. NAVAL VESSELS.** (Yachts).—Sealed proposals will be received at the bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, 4 August, 1919, when they will be publicly opened, for the purchase of the steam yacht ARCADY S. P. 577 now at New London, Conn.; Steam yacht DRUID S. P. 321 now at New London, Conn.; motor yacht CORONET S. P. 194 now in the Marine Basin, New York; steam yacht JOYANCE S. P. 72 now in Marine Basin, New York; steam yacht REPOSO S. P. 195 now at Charleston, S. C. Exact location may be ascertained from the Commandant, of the Naval District concerned, and should be obtained before making trips for inspection. Appraised values: ARCADY, \$12,500; DRUID, \$60,000; CORONET, \$7,500; JOYANCE, \$12,000 and REPOSO, \$5,000. The sales will be for cash to the bidders offering the highest price, Navy reserving the right to reject all bids. Forms of proposal and bond, and information concerning the vessels, and the terms and conditions of sale, may be obtained upon application to the bureau of Supplies and Accounts. JOSEPHUS DANIELS, Secretary of the Navy. 6-30-19.

For Sale—Pal II—40-foot cruiser powered with a 24 h.p. 4 cylinder 4 cycle heavy duty Regal gasoline motor. Speed 10 miles per hour. Boat fully equipped and first class in every particular. Price \$2300. R. J. Kellar, Jr., 87 35th St., Brooklyn, N. Y.

**FOR SALE—Bargain—2 cyl. 8 H.P. Caille—**Engine with magneto clutch complete. New, in crate as received from factory—guaranteed. Ernest Merrow, Trevett, Maine.

**FOR SALE:—One hundred 8-cylinder motors,** 3 in. bore by 4½ in. stroke. Brand new and block tested. \$100.00 each. New equipment including Atwater Kent distributing and coil, Stewart carburetor, Dyneto Starter and generator, \$100.00 extra. Regal Motor Car Co., 216 Piquette Ave., Detroit, Michigan.

For Sale—New 2 cyl. 6 Thrall Marine Speed Motor, salt water equipped. Separate copper jacketed cylinders, Baldridge reverse clutch, carburetor, muffler, coil, etc. Price \$100. K. D. Bisbee, East Westmoreland, N. H.

A small well established boat yard—near Long Island Sound—requires the services of an energetic and intelligent man as yard-superintendent. This is no "soft-snap," but to the man with all round experience and the ability to handle men, it gives a chance to make his own future. State salary wanted and give past experience to Box 9, MoToR BoatingG.

**FOR SALE—Lake Michigan—Sloop "Prairie"** 43' 0" x 8' 6". Lead keel. Complete cruising outfit, roomy cabin, dingy, stove, utensils, compass, anchors, lights in commission. \$800.00 or best offer. Reiman, 6426 Aberdeen St., Chicago, Ill.

**HIGH SPEED mahogany, 2 and 4 passenger** runabout hulls. Several high grade bargains at Bronx Boat Works, foot of Willow Ave., near East 132nd St., New York City.

A Foreman Joiner and Boatbuilder. Practical experience building high grade cruisers and runabouts, both round and V-bottom types. At present employed, desires change. Capable to take charge and lay out work. Will submit drawings. Address, F. A. M., MoToR BoatingG.

Wanted—A forty or fifty foot cruiser, suitable for a next winter's trip on the west coast of Florida. Fully equipped and delivered there. Give full particulars. E. R. Trippe, Prince Albert, Sask., Canada.

Wanted:—Shallow drafted strongly built boat for Southern Waters, of fifty to seventy-five tons capacity, mainly, on deck, with accommodations for passengers. Speed eight to ten miles. Prefer hull only. Would consider Crude Oil Engine. Macdonald, Wilkins & Co., Frogmore, S. C.

25 Ft. speed boat for sale, equipped with 6 cylinder Wisconsin 3¼ x 5 motor, Joe's gear, automobile top and steering wheel. Speed between 20 and 25 miles per hour. Cedar hull, oak and mahogany trim. Boat recently overhauled. No reasonable offer refused. Send in your bid. T. R. Aston, 242 Housatonic Ave., Stratford, Connecticut.

**SALE OF U. S. NAVAL VESSEL, (Motor Yacht)**—Sealed proposals will be received at the bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, 20 August 1919, when they will be publicly opened, for the purchase of the Motor Yacht JESSAMINE S. P. 438, now at Detroit, Mich. Exact location may be ascertained from the Commandant, Ninth Naval District, Naval Training Station, Great Lakes, Ill., and should be obtained before making trips for inspection. Appraised value \$8,000. The sale will be for cash to the bidder offering the highest price, NAVY reserving the right to reject all bids. Forms of proposal and bond, and information concerning the vessel, and the terms and conditions of sale, may be obtained upon application to the bureau of Supplies and Accounts. JOSEPHUS DANIELS, Secretary of the Navy. 10-7-19.

### NEW AND USED AIRPLANE MOTORS

Use an airplane motor  
in your boat  
More Power and Speed  
Less Gasoline and  
Weight

Airplane Motors, 30 to 300 H.P.  
Lowest Prices.

Send for Bulletin "MG"

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**Trimount**  
Whistle Blower Outfit  
Blower runs by friction  
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wheel. Whistle of brass,  
nickel-plated.  
Made in 3 sizes.  
**TRIMOUNT ROTARY POWER CO.**  
20 Heath Street  
(Factory: 292 Whiting Ave., East Dedham, Mass.)

**Trimount**  
Rotary Hand Sills  
Pumps  
All bronze composition.  
Suction lift 8 to  
20 feet. A lifelong  
convenience.  
Made in 3 sizes.  
**TRIMOUNT ROTARY POWER CO.**  
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#### "One cyl. Two cycle"

1½ H.P. Racine ..... \$19.  
1½ H.P. Detroit ..... 30.  
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7½ H.P. Gray & gear ..... 75.  
9 H.P. Fox ..... 70.  
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4 H.P. Tuttle ..... \$45.  
5 H.P. Wonder ..... 50.  
7½ H.P. Fairbanks-  
Morse ..... 75.  
8 H.P. Cady ..... 75.  
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12 H.P. Gray ..... 115.

#### "Four cyl. Four cycle"

12 H.P. Universal ..... \$72.  
20 H.P. Ford Model T  
with governor control 135  
30 H.P. Continental ..... 45  
Heavy duty 6" bore 6"  
stroke marine engine 285.  
8 H.P. Dunn 2 cyl. .... 72.

Also large line of auto motors, stationary and tractor engines. low prices. Badger Motor Company, Milwaukee, Wis.

When writing to advertisers please mention MoToR BOATING, the National Magazine of Motor Boating



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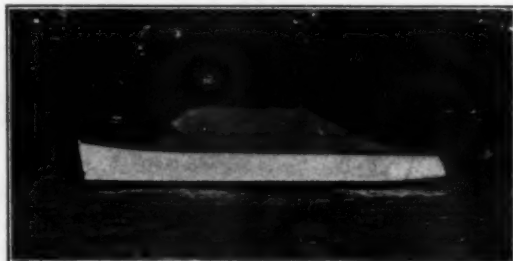
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### Opportunities for the Motor Boatman

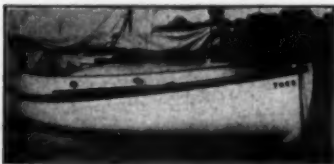
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offer of the month. Please mention MoToR BoatinG.



**FOR SALE**—Houseboat.—Screw type. 25 x 50—4 rooms and bathroom. 1 room on upper deck. 3 years old. In excellent condition. E. F. Petersen, City Island, N. Y.



**For Sale**—25 foot open boat, semi-speed, complete with spray hood, cushions, etc. Electrically wired. 4 Cyl. 15 h.p. Scripps Special engine, brand new. For information apply to Henry J. Amy, 39 East 53rd St., New York City.



**FOR SALE**—Cape Cod C. B. Cat "Gemini", 28' x 12' x 30" roomy cockpit, comfortable cabin, 7 H.P. Lathrop, good rig, cushions, skiff, sacrifice. \$600 cash. Rosemond, Forley St., Elmhurst, N. Y.

**USE "SNAPPER" ENGINES** for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

**BOSCH MAGNETOS**—All types \$15.00 each and up—Coils: Remy-Splittdorf—Delco and other types \$5.00. Low Tension Magnets all models \$5.00 each and up. Presto Tanks \$5.00—Lighting Generators \$9.00. Starters. Carburetors. Switches. Steering Wheels, etc. Auto Motors, both water and air cooled all sizes. Write for late bargain bulletin second-hand Auto material suitable for all purposes. Johnston, West End, Pittsburgh, Pa.

**NIAGARA motor**, 90 Horse Power, six cylinder, four cycle, complete with reverse gear, air pump, Bosch magneto. In perfect running order, \$600. J. G. Robinson, 484 Bewick Ave., Detroit, Mich.

**MOTORS**—Marine and Auto style, from 1 to 6 cylinders. Bargains in Magneto, Carburetors, Coils, Gas Tanks, Classy Seats, etc. If you are fixing up your boat, write us and say what you need. Atlantic Supply Co., Long Branch, N. J.

**CANADIANS**, Second-hand engine bargains. Send for list.

**GUARANTEE MOTOR COMPANY**  
73 Bay Street, North Hamilton, Ont., Canada

**FOR QUICK DELIVERY**, at low prices, high grade, heavy duty, marine crude oil engines of 40, 60, 75, 85, 112 and 150 B. H. P. Recent changes in owner's plans makes these engines available. Jacobson Engineering Co., 5 Second Ave., Rensselaer, N. Y.

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#### BARGAINS

##### EAGLE TWO CYCLE ENGINES

We purpose to close out at greatly reduced prices our entire stock of "Eagle" two cycle engines, as we intend to discontinue the manufacture of this type of engine in the future. Write at once for information to the

**TORRINGTON COMPANY**  
STANDARD PLANT

Torrington, Conn.

A few medium and high speed, one, two, four and six cylinder, four-cycle marine motors, new or rebuilt. Reliance Motor Boat Co., 210th Street and Harlem River, New York City.

The big Commercial Number of MoToR BoatinG—our regular September issue—will be mailed to every owner of a commercial motor boat, every naval architect, and every live boat builder in the United States, in addition to the 22,000 regular copies.

You are thoroughly familiar with the products you are selling—

Is every possible buyer as familiar with them?

Does he know that the articles you are selling are just what he is looking for?

Does the naval architect know all about your goods in order that he may incorporate them in his plans and specifications?

Does the boat builder know that you have what he can use to best advantage?

**With your ad in the Commercial Number of MoToR BoatinG every one of them is going to know.**

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**Thomas D. Bowes, M. E.**  
NAVAL ARCHITECT AND ENGINEER

Offices:

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NAVAL ARCHITECTS & ENGINEERS

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501 FIFTH AVE., at 42nd St., N. Y.

Desirable yachts of all types for sale and charter

Telephone 908 Vanderbilt

## Chart Sketching for Motor Boatmen

(Continued from page 11)

from which they can be accurately copied. In cases where no Government chart exists of the area to be sketched a couple of plane table stations must be chosen by inspection and the distance between them as accurately judged as possible. The bearing of the line between the stations can be taken with the compass and thus a chart can be drawn which is in good proportion and properly oriented; but the chart will have the same percentage of error in all its dimensions as existed in the assumed length of the base line between the two chosen plane table stations. This kind of error, however, is not of importance in a sketch chart, as distances are seldom scaled from such charts and incorrect distances will not prevent one's finding the way through a tortuous channel by the use of the chart.

The exact area which needs to be mapped having been decided upon, a suitable scale for the chart chosen, and the permanent features of the Government chart having been transferred to the sketch chart, the work of drawing the sketch should be proceeded with. The most convenient of the plane table stations is first to be used, or "occupied" as surveyors say, and the sketch must be taken to this point and oriented as described above. When the table has been oriented lines are to be drawn from the plotted position of the first plane table station toward a few important points which are to be especially accurately located on the map and which also are to be in such a position that having been accurately located will enable the draftsman to control the accuracy of the sketching in their vicinity by using them as reference points. These lines which radiate from the plane table station are to be carefully labeled. Great care should be used in drawing these lines; as few should be drawn as possible. The beginner is almost sure to draw two, or even three or four times as many lines as are necessary. It should always be remembered that the chart is essentially a free-hand sketch and that if something is correctly located every mile or so along the channel the other features can be sketched with a sufficient degree of accuracy by estimating their distance from and relation to the accurately located points. In general it may be said that half a dozen well-located points should "control" a chart of a fairly-sized inlet.

When all necessary work has been finished at the first plane table station, the second station is occupied and lines are drawn from the plotted position of the second station toward the same objects that the first lines ran toward. The intersection of a pair of lines toward an object defines the object's position on the chart. All lines may be erased as soon as the points are located and labeled. With the important points thus well located, it is a simple matter to run slowly over the channel to be mapped and sketch in the details. Care should be used to get all sketched objects in their proper relation to the nearest accurately located points, as by observing the relation of objects to these points the whole sketch can be made just about as accurate as the plane table work. Just as in drawing the radiating lines from the first station, there is a great tendency on the part of the beginner to try and show too much on the chart. Nothing should be shown which will not be of distinct interest to the pilot using the chart, extraneous details will

(Continued on page 56)

## TAMS, LEMOINE & CRANE

Yacht and Ship Brokers

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New York

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153-5-9 West 15th St., New York City

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embody every essential for maximum efficiency and reliability. They offer the greatest value for your money and may be used on either gasoline or kerosene. Twelve different models, all four-cycle, medium and heavy duty types. Write for catalog.

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**AVOID** disaster by using a **DIEBOLD** compass on that boat. All materials first class. No rubber gaskets to rot. A very hard pivot and high-grade jewel. Navy degree circle on dial. Brass and mahogany linings. Also new course finder and bearings instrument. Send for descriptive catalog.  
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*"We find things"*

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# Race for Displacement Boat Championship of North America

The Declaration of Trust Governing the Trophies Presented by Carl G. Fisher and James A. Allison of Indianapolis to the American Power Boat Association

CARL FISHER, of Indianapolis, Ind., having presented to the American Power-Boat Association a trophy for the purpose, the American Power-Boat Association offers this as a perpetual challenge trophy, or until won as hereinafter provided, to be known as the Carl Fisher Trophy for Displacement Boats, representing the Displacement Boat Championship of North America, for the purpose of promoting speed contests between displacement boats of a wholesome character and improving and perfecting models and construction of internal combustion engines for displacement boats and for developing the lines, designs, and usefulness of the displacement type of motor boat, hereby sets forth and declares the terms and conditions which shall govern the tenure of said trophy and competitions therefor. Furthermore, James A. Allison, of Indianapolis, Ind., hereby promises to present to the winner of the match each year for 3 years—a prize to the value of \$1,000 of the winner's own choice and selection.

## Article I

Any Club or Association in North America or any individual shall always have the right to challenge for the trophy and to run a match therefor, provided such challenge shall be made and such match shall be run in accordance with the terms and conditions of the agreement.

## Article II

Matches for the trophy shall be run under the rules and regulations of the American Power-Boat Association governing sanctioned races, as adopted or amended at the annual meeting of the Association next preceding the race, unless otherwise provided in this Declaration of Trust. The match shall be for Displacement Racers as defined by the American Power-Boat Association, or this Deed of Gift.

## Article III

The first match for this trophy shall be run on Lake George, N. Y., during the summer season of 1920; the second match, at Miami, Fla., during the winter of 1920-1921, and the third match at Detroit, Mich., during the summer of 1921. Subsequent matches shall be run at a time and place selected as hereinafter provided.

## Article IV

The match shall be managed by a Race Committee of three as follows: The president of the American Power-Boat Association (Chairman), the secretary of the Racing Commission of the American Power-Boat Association and one other person to be named by the local club holding the race.

## Article V

If this trophy be won three times by the same club, person or persons, it shall become his or their perpetual property and the terms and agreement of this declaration of trust will thereupon become null and void.

## Article VI

All challenges must be made in writing according to form herewith, and if made by a Club must be signed by the Secretary (or proper official) of the challenging club, and must be forwarded to the secretary of the American Power-Boat Association. A copy of the challenge must be sent to the Secretary of the Club or person holding the trophy and a copy to the Secretary of the Racing Commission of the American Power-Boat Association. To insure a contest, one challenge must be delivered at least six months before the date set for the match. Subsequently, other clubs or persons may challenge and enter the same contest, but no challenge shall be received later than ten days before the date set for the first race of the match. In case no

challenge is made or received six months in advance of the match, the Committee may at their discretion schedule the race and accept entries.

## Article VII

(a) Match shall consist of three races, to be sailed on consecutive days, excluding Sunday.

(b) Courses shall be 30 statute miles in length.

(c) Courses shall be laid in water of not less than 10 feet and shall be as free from turns as possible. The finish must be at the starting line. The length of each lap of the course shall be 3 miles or approximately 3 miles. The course shall be approved by the Racing Commission of the A. P. B. A., who shall have power to accept or reject same.

(d) The start shall be a one-gun standing start, with a preparatory gun five minutes before the starting time. A flag shall be dropped by the starter one minute before the starting time. During the interval of time between the dropping of the flag and the starting gun boats shall not make headway through the water toward the starting line in a zone within 300 yards of the starting line.

Owners or their representatives shall draw for positions previous to the start of each race of the match.

(e) The winner of the match shall be determined by the point system, whereby each boat entering and finishing a race of a match receives one point for entry and one additional point for each boat which she defeats, the winner being the boat scoring the highest aggregate number of points in all the races of the match. In computing points the maximum number of entrants shall be deemed racing each day and those that do not start shall be counted as defeated boats. A boat which starts in a race, but does not finish before one hour after sunset, shall receive no points for that race, but shall be counted as a defeated boat in that race by the boats finishing. In case two or more boats have scored the same number of points for the series, thus establishing a tie, the match shall be awarded to that one of the tied boats which has covered the course in the best total elapsed time for three races.

(f) Each Club or person challenging shall name its representative boat, or boats, and shall file with the challenger Club or person and the Racing Commission of the Association at least ten days before the date set for the first race, a certificate with the measurer of such club of the measurement of such boat.

(g) No club shall enter more than three boats for the match.

(h) No boat shall be eligible to compete for this trophy which has since the year 1916 raced for a cash prize, or which has competed in or has been entered in any race where a cash prize was offered, or which at any time since 1916 has been entered in a race by a person who is not an amateur within the meaning of the American Power-Boat Association Racing Rules.

(i) Measurement of boats must be verified prior to the match by the Measurer or the Assistant Measurer of the Association.

(j) The minimum waterline length of a boat competing for this trophy shall be 32 feet.

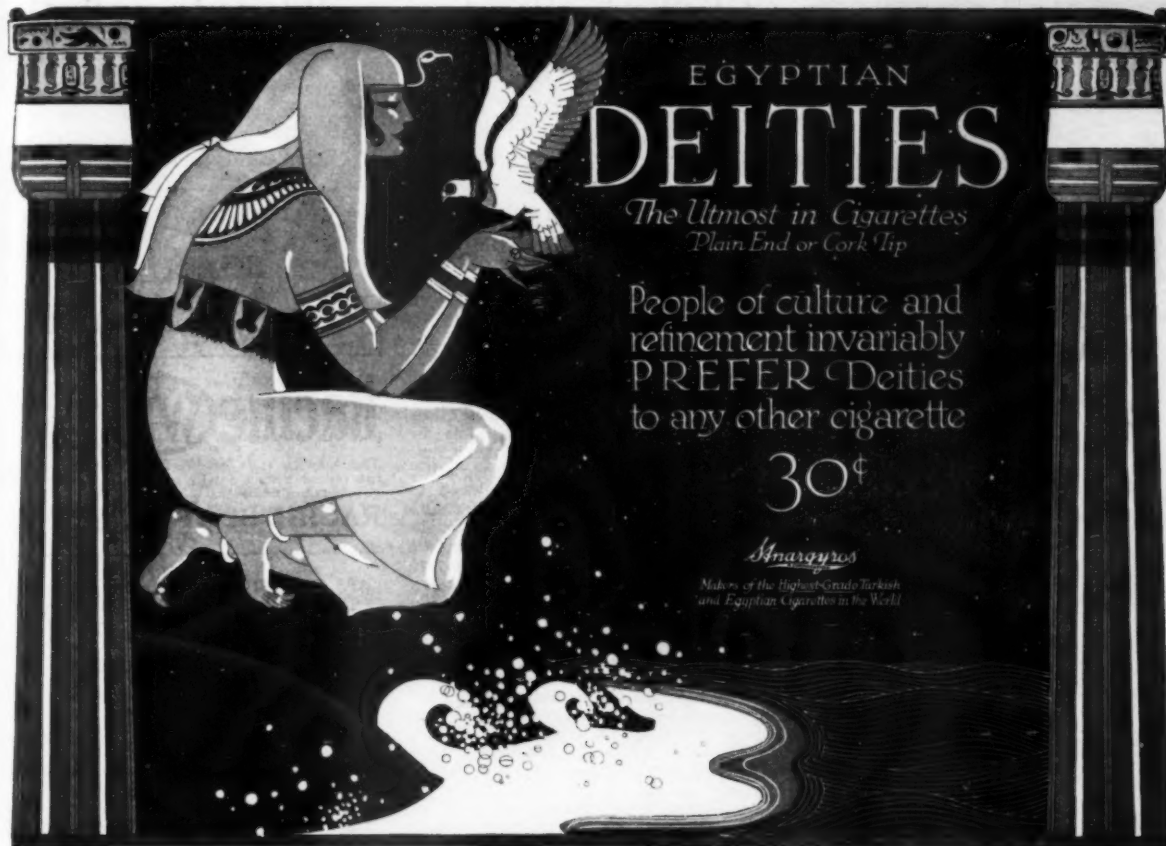
(k) The total maximum piston displacement of the motor or motors in boats competing for this trophy shall be 3,000 cubic inches.

(l) The form of power plant shall be one or more stock marine motors. The owner shall file an affidavit, sworn to by the engine manufacturer, stating that the motor or motors are regular stock marine motors and are not "special" in any particular.

(m) Competing boats must exhaust at the stern close to the waterline.

(Continued on page 96)





EGYPTIAN  
**DEITIES**

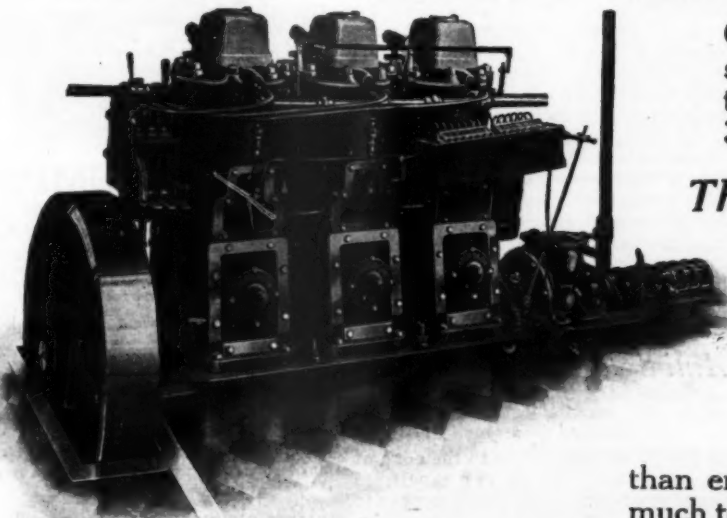
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Larger sizes, Jacobson Gas Engine Co., Albany, N. Y.

Used for all kinds of Work and  
Pleasure Boats. Also Stationary  
Electric Plants, Ice Plants, Etc.

## Chart Sketching for Motor Boatmen

(Continued from page 53)

only confuse the drawing and decrease its value. With the location of all important visible features of the channel shown, it only remains to take and plot soundings to have a finished chart.

Soundings should be taken in the shallowest, or controlling parts of the channel, so that the chart may enable a pilot to decide whether or not a vessel of a certain draft can be taken through the channel. The soundings can be most conveniently taken with an ordinary hand lead such as all cruisers carry, but before the soundings are taken the markings of the lead line should be carefully checked. It is surprising how inaccurate a lead line will become after a little use, and many motor boatmen quite unconsciously allow for inaccuracies in their lead line by assuming an incorrect draft for their boat. Soundings taken at any time other than at low water must be reduced to their proper value at low water by subtracting from them the estimated height of the tide at the time of taking the soundings. It is desirable, however, to take the soundings at low water, as not only is a possible error in this correction avoided, but by going over the channel at low water the draftsman will be able to make final corrections to the locations of sand bars and other obstructions and dangers to navigation. Soundings can best be located by estimating their position.

Next month the rapid sketching of narrow channels which do not readily lend themselves to the plane table method of mapping will be described as well as accurate methods of locating dangers to navigation which may be accidentally found and should be reported promptly to the local office of the engineers in charge of harbor improvement work in the vicinity. The matter of finishing up sketch charts, preparing tracings for blueprinting, etc., will also be touched upon.

## Straightening a Bent Shaft

(Continued from page 24)

should be directly under the jack and driven in tight. This method has been used successfully with bronze shafting as large as  $1\frac{1}{2}$  inches in diameter.

A one-ton automobile screw jack costing less than \$1.50 will be found a handy tool about a boat, especially where the work is done by one man. It can be used for raising the engine, holding the skeg in position when putting in the lag screws, adjusting the blocking under a small boat when hauled ashore, and a dozen other purposes.

## Anti-Splash Device for the Tank

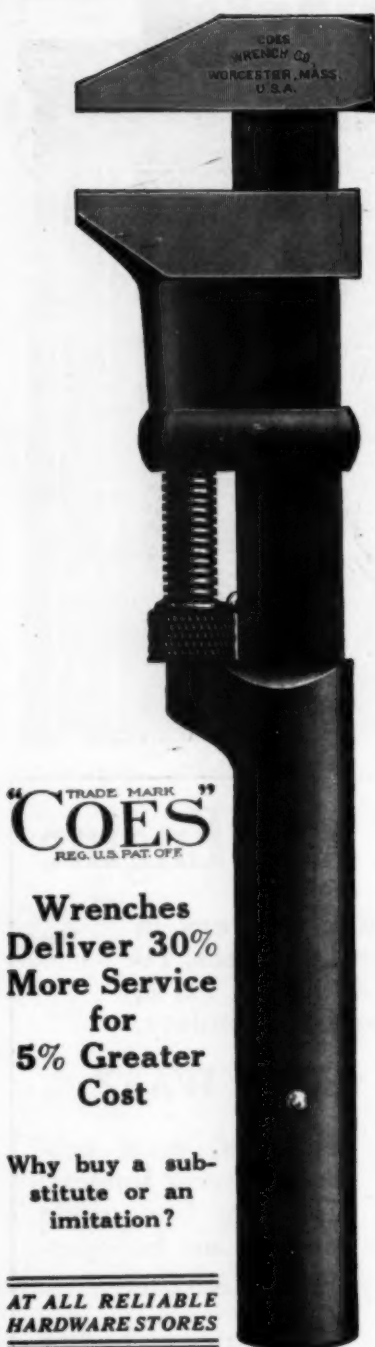
(Continued from page 24)

$\frac{1}{8}$ -inch holes made close to the edge of the nipple allow the air to escape from the tank after the gasoline has risen to the level of the bottom of the tube, otherwise the confined air would prevent the gasoline from rising much higher.

With this device screwed into the tank, it may be filled to the very last gill, and even in the roughest weather not a drop will be lost.

Fig. 2 shows the device in place and the tank closed with a cap.

Advertising Index will be found on page 100



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The only motor for shallow water.  
Air drive 3 & 5 H.P. for light pleasure and freight boats. Write for catalog and prices.

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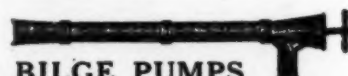


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for circulating purposes  
are the very best. Hun-  
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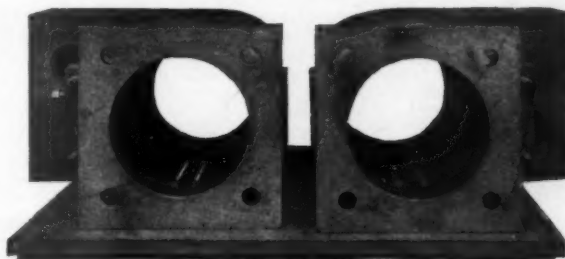
for marine work a specialty. Our experience in this particular field is at your disposal. Get our estimates before specifying on aluminum, bronze and composition castings, also drop forgings of steel and brass.

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## REPAIRED BY THE LAWRENCE PATENT PROCESS

The Lawrence Patent Process is this:—A silver nickel alloy is electrically fused into all scores and defects and the cylinder is then refinished equal to new. Our work is so perfect that even the best experts find it impossible to distinguish the perfect finish of the cylinders renewed by us and the perfect ones just turned out of the foundry.



### Cylinders Repaired without Regrinding

Cylinders repaired by the Lawrence Patent Process are unique in the fact that this is the only way of repairing cylinders without regrinding and whereby the standard pistons and rings for the cylinder fit perfectly, because the bore is not altered. This means perfect compression. Our process is inexpensive and after completion of the work by our skilled mechanics the cylinders are at least as good as new.

### Workmanship and Satisfaction Guaranteed

Fifty-seven years of unexcelled service to our patrons has enabled us to give an unqualified guarantee on all our work. Should our work not last as long as your motor we will make good. Never have we been called on to do this. Leading engineers have pronounced our process correct in every sense of the word. Manufacturers send us their work—send us yours.

*Send us a card stating the trouble with the cylinders of your motor, the bore and the number, and all information together with prices for putting your motor in shape will be sent to you.*

**Engine Manufacturers: We will grant licenses on a liberal basis for repairing of sand holes and blow holes in castings. Write for information.**

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## Steps Right Along

There's steady going and dependability in boats equipped with the

### Universal MOTOR

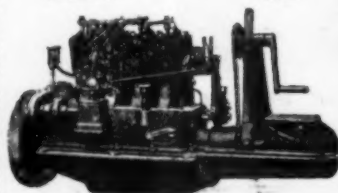
This neat, trim engine has been highly standardized after years of specializing in one size, our Model C. 9-12 H.P., 4-Cyl., 4-Cycle,  $2\frac{3}{4}$  x 4—300 to 1600 R.P.M.

It is made for all sizes of boats up to 30 feet in length,—speed, family, fishing, lifeboat, tender, and all commercial purposes.

The Universal Motor's reliability under widely varying conditions is evidenced by a growing demand all over the world.

Send for Bulletin 29

UNIVERSAL MOTOR CO.  
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## Gear Pulling Made Easy



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**Ten Days' Trial** If your dealer or fitter does not have them we will send you one. Try it ten days. If not satisfactory, return to us and we will refund your money. We also make the Grab Rim Tool.

THE GLOBE CO., 225 State Street, BOSTON

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The Ideal Tender



For many years the famous "Davis Dink" has been accepted by the boating world as the ideal tender for any boat. Owners of the finest yachts and boats have been among the first to specify "Davis Dink" when approving plans and specifications.

From now on the "Davis Dink" is to be known as the "Sandusky Dink". The change is in name only—the quality of material and excellence of design will remain the same.

"Sandusky Dinks" are light, strong and serviceable. Both row and power are continually in stock in sizes from 8 to 16 feet. Send for catalog today.

Sandusky Boat & Cabinet Works, Sandusky, Ohio

## Where Are We?

(Continued from page 13)

of a small hole  $\frac{1}{8}$  inch in diameter, which is bored near the upper end. The lower part of the vane is cut as shown and one-half of it also has a fine wire down its center. The whole vane is mounted at its center to the wooden block, the compass card and vane being concentric.

To mount the bearing finder on the boat any convenient sort of fixture can be used, depending upon the location of the compass on the boat. If one does not desire to have it fixed in a permanent position it can be simply laid on deck or even held in the hands, if the observer is careful.

To use the bearing finder it is placed in some convenient place on deck so that one set of tacks represents the bow of the boat. The compass card is then turned by hand so that the point on the card which represents the course on which the boat is, will be opposite that point on the compass card which represents the correct heading of the boat at the particular moment the bearing is to be taken. Keeping the pelorus base and its compass card in this position, the movable sighting vanes of the instrument are then turned so that it is possible to obtain a bearing of the desired distant object by sighting through the two holes in the uprights. The bearing of the object will then be indicated on the compass card below through an opening in the horizontal member of the sighting vanes. If possible, sights or bearings on a number of distant objects should be taken, and the bearings plotted on one's chart as a check. If all the lines representing the bearings intersect in a common point, one may safely assume that the bearings are correct. It is hardly necessary to state that successive bearings should be taken as quickly as possible after one another, so that the boat has not covered any appreciable distance during the time.

## A Mooring Buoy Wrinkle

(Continued from page 24)

looped over the samson post, or through the chocks, as in Fig. 3, and thus the boat becomes instantly moored temporarily, sufficiently secure for all ordinary conditions. The regular mooring line can then be pulled through the mooring ring at leisure, by reversing the operation previously described.

This little float device, besides being easily seen (it can be made as large as desired), makes the picking up of the mooring much less uncertain; for, instead of hooking onto the mooring ring and holding it till the boat's headway is checked, the float can be pulled aboard quickly, and the headway of the boat stopped by the line C. Preferably the mooring line G should be a special one, very heavy, and kept for that purpose alone, and it should have an eye or thimble spliced into each end. The time required to unfasten from the mooring with such a line, and with the float and auxiliary line described, or to permanently secure the boat to the mooring at the end of a trip, is no more than with any ordinary method; and the mooring will seldom if ever be missed when trying to make it in a heavy seaway.

HARRINGTON BARKER,  
329 U. S. Patent Office, Washington, D. C.

Advertising Index will be found on page 100

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Guaranteed.

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Do Not Throw Grease

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Increases Revolutions, No Back Pressure!

Cannot clog, nor collect salt; water cannot flow back to cylinder. No heating, no odor. Used free or under water—adjustable discharge. Lightest, cheapest to install. Free booklet shows why. Send for it today.

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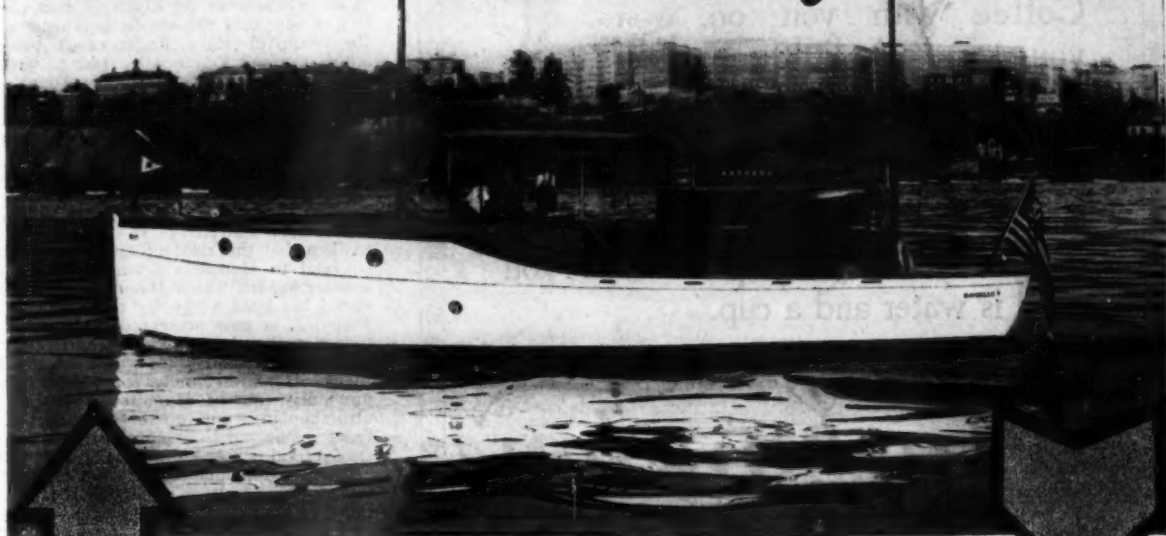
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# "Maybelle V" Wins New York-Albany Race



## — AND HER CLAY ENGINE WAS PARAGON-EQUIPT—NATURALLY

When she chugged across the finish line off the New York Motor Boat Clubhouse, her owner, H. C. Vaughan, was proud of his boat and every detail of her equipment—for she had made the run of 235 nautical miles in just 36 hours.

"Maybelle V" is a 40' x 10' bridge deck cruiser, driven by a two-cylinder  $7\frac{1}{2}$ " x  $7\frac{1}{2}$ " Honest Clay engine, Paragon-equipt.

The majority of the better type of marine engine builders furnish Paragon Reverse Gears as standard equipment.

To be completely efficient, your new engine should be Paragon-Equipt.

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**PARAGON REVERSE  
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POWER DORIES, GOV. MODEL LAUNCHES, ROWING  
AND SAILING DORIES AND SKIFFS.

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## STANDARD KID

Four Cycle Light Weight Engines

Five sizes—Single cylinder 3½ H.P., 4 H.P., 7 H.P. Two cylinder 7 H.P., 8 H.P.

Send for Catalogue. Live Agents wanted.

CHANDLER-DUNLAP CO. Polson Bldg. SEATTLE, U. S. A.

## Three Hundred Years of History in a 3-Hour Cruise

(Continued from page 15)

Castle Point, a projection which juts out into the Hudson and is one of the landmarks of all cruising parties. This place was constructed in 1835, and is rich in historic interest.

As we cruise up river a bit farther, we come to the famous recreation grounds of New Yorkers of the days before the Civil War. These were the Elysian Fields, and it was here that the atrocious murder of the beautiful Mary Rogers took place, which inspired Edgar Allen Poe to write his gruesome story, "The Murder of Marie Roget."

In all the history of the United States no duel stands out more prominently than that fought on the morning of July 11, 1804, between Alexander Hamilton and Aaron Burr, two of the most prominent figures in American life of any period. It was upon a stretch of sward near Weehawken that this encounter, which proved so fatal to Hamilton occurred, and the boulder against which Hamilton's seconds rested his head as he lay there mortally wounded, is now preserved and marked, topped with a bust of the famous statesman near the spot. This was a fatal spot for the Hamilton family, for a short time previously one of Hamilton's sons was also slain in a duel on the same spot.

As we get up to a point opposite Seventy-second street, Manhattan, and just below the Columbia Yacht Club, is Block House Point, where in 1780 "Mad" Anthony Wayne and "Light Horse" Harry Lee made an unexpected descent upon the Block House manned by the British and put them to rout, capturing a large herd of cattle, which the block house was designed to protect. Just above this is Bull's Ferry, which was an important landing place in Revolutionary days.

Fort Lee is perhaps the best known of the historic spots along the Palisades, for the site of the old fort is marked by the town that now bears that name, and frequently remnants of the fort are found, while until recently parts of the fort could be seen. Before the construction of the fort Etienne Burdett, a Huguenot merchant of New York, had built a home at the foot of the gorge intersecting the Palisades below Fort Lee Bluff. A ferry ran across here and much of the munition and troop transport of the Revolution passed before the Burdett place as the Continental Army used the ferry to link up its lines of communication. General Mercer located a battery at this point and on the morning of August 18, 1776, as the British ships Rose and Phoenix were passing down the river, a cannon ball from one of the battery's guns smashed into the Britisher and a lively engagement ensued, without much damage being done to either side. About two months later two British frigates moved up and took station off Burdett's landing in order to cut the river communication of the Continentals. An engagement took place between the ships and the barrette battery of Fort Lee Bluff and the redoubtable patriots lowered two 18-pounders to the water's edge at the ferry landing and so smashed up the frigate Irving that she was in danger of sinking.

Fort Lee was held by that part of Washington's army under General Greene, but when Fort Washington on the Manhattan side of the river fell November 16, Greene was forced to evacuate Fort Lee and the British who immediately occupied the work captured large stores of army supplies which Greene was forced to abandon in his precipitate retreat. Lord

(Continued on page 62)



## Why We Find Full Pages Cheaper than Eighths and Quarters

By Ralph Thompson

(Sales Manager, Paragon Gear Works.)

A REVIEW of Paragon advertising records will show that only a few years ago our maximum space in MoToR Boating was one-quarter of a page. The average was eighths and sixteenths. *Last year eighteen pages of space were used in the twelve months.*

And yet, we are working on no vague theory in placing this advertising. Each of the publications we use must be put on a basis in the same way that we would rate a salesman. If a salesman's expenses eat up the profits of his sales, he finds a little blue card in his envelope. Each publication must show us tangible results per dollar expended or it has to be cut from the list.

To be more specific, we know to a cent the cost of each inquiry which the several publications we are using bring to us. MoToR Boating proved itself, measured by the cold hard rule of dollars and cents, the most economical result bringer. A salesman who shows increased results receives a raise in salary. A publication that performs the same service usually receives increased space.

Right here is an interesting comparison. *The year in which eighteen pages were used in MoToR Boating, our inquiries cost far less than they did in the year in which only small space was used.*

This is our answer to the question: "Why such large space?" In a nut shell, we have found big space will bring inquiries at a less cost than will small space.

I am familiar with the critic who says you can't always judge a publication by the number of inquiries it brings in. I will grant that this is true—in part. An inquiry to us is merely a token of interest, but I maintain that the publication which brings in the largest number of inquiries for each dollar expended proves that this publication's

readers have shown greater interest in our product than the others. We, therefore, are not buying inquiries but "reader interest."

A good many folks think that the prime use of advertising is to sell goods. We admit that this is one of the chief aims of advertising and advertising that will not sell goods is usually pretty poor.

And yet, this does not explain why, during the war, with production almost entirely devoted to Government uses, a concern such as ours continued to advertise as aggressively as we did. Understand, this advertising could not have been aimed to sell goods. There were no goods to be sold.

Brought down to everyday reasons, the aim of this advertising during a period when the factory had nothing to sell was this: "to keep the Paragon name and trade mark and service in the minds of the thousands of motor boat men who not only may some day buy a Paragon, but who already have one."

In the April number of MoToR Boating, we used sixteen full pages. Such an innovation naturally invited criticism. It is a pleasure for me to say that, measured by our rule of "tangible reader interest," this sixteen page advertisement was the cheapest advertising sales effort we have ever made. Our reason for inserting it in MoToR Boating only was because this publication had proved its ability to carry our message more economically than any other.

Of the various publications that Paragon has used during the last two years, the rating of the various publications as regards cost per inquiry is as follows: MoToR Boating, lowest; second publication, 23% greater than MoToR Boating; third publication, nearly three times that of MoToR Boating; and the others run about even with a high cost of five or six times that of MoToR Boating.

**Advertising results are progressive—the larger your expenditure, the larger are the results per dollar expended.**

# PARAGON

When writing to advertisers please mention MoToR Boating, the National Magazine of Motor Boating

## "SIMPL-EZY"

TRADE MARK  
GALVANIZED PRESSURE  
PUMP

A GALVANIZED FORCE  
PUMP WITH THE AD-  
VANTAGES OF AN EX-  
PENSIVE BRASS  
PUMP.

For  
Boatmen  
Fishermen  
Contractors  
Plumbers  
and  
many  
others.



Made in the  
following sizes:

Size	Capacity	Price
1 1/2" x 24"	2 Gts.	\$2.75 ea.
2" x 24"	3 Gts.	3.00 ea.
2 1/2" x 36"	4 Gts.	3.00 ea.
3" x 24"	4 1/2 Gts.	3.25 ea.
3 1/2" x 36"	6 Gts.	3.50 ea.
4" x 36"	8 Gts.	3.75 ea.

Satisfaction Guaranteed

The "SIMPL-EZY" Pump is indispensable where the transfer of liquids is necessary. Made from Heavy Gauge Galvanized Iron. Has a tapered spout for hose attachment and four times the capacity of the ordinary pump.

One operation will convince you of its merit.

Your Dealer or

**BURROUGHS TOOL CO., Inc.**  
87 Warren Street New York City, U. S. A.

## BURGER BOATS

COMMERCIAL AND PLEASURE  
If you plan to build a new boat this spring it will pay you to get our prices.

We are prepared to furnish any boat up to 200 feet for all purposes and we guarantee satisfaction.

Write for information

**BURGER BOAT CO.**  
Manitowoc, Wisconsin



## You Can Build Your Own Boat

and save 2/3 the cost by the **BROOKS K. D. SYSTEM.**

Send for catalogue showing all models.

**BROOKS MFG. CO.,** SAGINAW, MICH.  
1101 RUST AVE.

WE CAN MAKE PROMPT DELIVERY OF  
NEARLY ALL SIZES OF THE FAMOUS

**EMERSON 2 CYCLE 4 PORT**

AT THE OLD PRICE

**HERFURTH ENGINE & MACHINERY CO.**  
Alexandria, Va.

## RUNABOUTS

19, 22 and 25-Footers Standard Models  
Complete with Power and Equipment or Hulls  
built to order complete at very reasonable  
prices. Dinks, Power Tenders and Row Boats.

**BADGER MOTOR BOAT CO., Inc.**

Address, Lake Ave., Cor. 4th St., Racine, Wis.

## Three Hundred Years of History in a 3-Hour Cruise

(Continued from page 60)

Cornwallis with 6,000 British veterans crossed the Hudson, landing at Alpine, a little fishing village at the present day opposite Yonkers, and the old stone and log tavern where Cornwallis made his headquarters is still standing, preserved practically intact by the Palisades Interstate Park Commission, and used by it as construction and police headquarters. The road that Cornwallis's men constructed up the side of the Palisades, a road of such a steep grade that military men of the present day are amazed that the British were able to get their heavy guns up its slope, still stands. In order to prevent the earth from sliding, huge logs were cut from the wooded sides of the Palisades and used and these logs are still plainly seen and in excellent condition. In those days Alpine was populated by the original Dutch settlers and their quaint customs and dwellings still survive to some extent.

If one swings the head of his boat in a bit just before reaching Alpine he may observe the huge boulder that the crew of the Monitor, the famous iron-coated warship of the Civil War used as a target just prior to her departure for the South and her memorable battle with the Merrimac. That the Yankee crew were good marksmen is attested by the substantial chunks that have been chipped from the boulder by the cannon balls. Opposite Riverdale is Powder House Landing where the old powder house, that housed Manhattan's supply stood years ago. Laimber's Landing is another historic spot and chugging a bit further upstream, and just below Alpine is Huyler's Landing, where the famous "candy family" had their home once upon a time. This was a busy place before the days of the railroads for much of the produce of the back country was brought here and shipped by boat to New York. An historic old brick house over 100 years of age is still standing here.

Just a stone's throw from the road up which Cornwallis led his men to the attack on Fort Lee, United States troops have come down by the hundreds of thousands from Camp Merritt, N. J., to embark for overseas to go to the assistance of the descendants of Cornwallis's men in the great war. Some 390,000 American soldiers marched down this road to take the boats that would carry them to the transports at Hoboken and some hundreds of thousands of the same and others have marched up its slope on their way back from "over there."

Undercliff Settlement, a mile back from the river bank, is a picturesque hamlet of houses of great age, in some cases still tenanted by members of the original families. Here, too, is an ancient graveyard with the stone headstones fighting to rise above the tangled undergrowth which all but hides them.

Sneden's Landing is sacred to Americans as the spot opposite which the anchored British fleet, by order of the English Parliament, conducted that ceremony in which the Navy of Britain for the first time saluted the flag of the United States of America. It was at Tappan, a few miles away that Major Andre, the British spy, was executed.

Advertising Index will be found on page 100

## LEECE-NEVILLE

ELECTRIC  
STARTING-LIGHTING  
SYSTEM

OUTFITS OF QUALITY



MANUFACTURED BY

**THE LEECE-NEVILLE COMPANY**  
CLEVELAND, OHIO

## INTEGRAL CAMSHAFTS

We make them for the leading builders of marine, airplane and automobile motors. We are Integral Camshaft Specialists, insuring the utmost in quality of workmanship and materials, accuracy and uniformity.

Let us quote on your designs.

**MUSKOGON MOTOR SPECIALTIES CO.**  
Muskegon, Mich.



"Airdrive"

Model L-2 3 H.P. for canoes, rowboats, fishing and hunting boats.

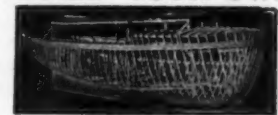
Model M-2 10 H.P. for light commercial use, and pleasure boats.

Model O-4 24 H.P. for work boats up to 20 ton capacity.

An "Airdrive" on your boat will decrease your power troubles, give you more satisfaction, and at low operating expense. Let one prove it for you on your boat.

**KEMP MACHINE WORKS**  
1217 So. Franklin Street,  
Muncie, Ind.

## BUILD YOUR OWN BOAT



**DEFOE BOAT & MOTOR WORKS**  
3218 State St., Bay City, Mich.

The Great Two-Cylinder

**KOBAN**

ROWBOAT MOTOR

The world's greatest and speediest motor.

Write for new catalogue.

**KOBAN MFG. CO.**  
246 South Water St., Milwaukee, Wis.

## WICKER-KRAFT YACHT FURNITURE

Used on the finest boats. Regularly supplied by highest grade boat builders. Wicker-Kraft chairs, fitted with life belts, are an original Wicker-Kraft idea.

Write for illustrated catalog.

**WICKER-KRAFT CO.,** Newburgh, N. Y.



# Supply Stations for SoCony Motor Gasoline and Polarine Oils and Greases

The Standard Oil Company of New York operates directly  
at all points except where other representatives are listed.

## NEW YORK BAY AND STATEN ISLAND

Bond & First Sts. { Gowanus Canal } Port Richmond, S. I. } S. O. Co.  
Brooklyn } S. O. Co. of N. Y. } Totenville, S. I. } of N. Y.  
Ulmer Park Pier } A. L. Anderson } Stapleton, S. I. } Sch. "Lawrence"  
Ft. 69th St., So. Brooklyn } C. Poling } Capt. Cattermole

## EAST RIVER

Ft. N. 10th St., B'klyn } S. O. C. of } Ft. E. 23rd St. } The Anna Service  
Ft. E. 10th St., N. Y. C. } N. Y. } N. Y. C. } of N. Y.  
Ft. E. 120th St., N. Y. C. } N. Y. } Ft. Walnut Ave., } John Rehm  
Bronx Kills, N. Y. }

## LONG ISLAND SOUND

Clason Point } C. F. Quinn } Cold Spring Harbor, L. I. } E. Abrams & Son  
City Island, N. Y. } Robt. Jacobs } Huntington, L. I. } Wheeler Shipbldg. Co.  
Mamaroneck, N. Y. } A. Malakoff } Port Jefferson, L. I. } Bayles Shipyard, Inc.  
Pt. Chester, N. Y. } J. Kapp } Northport, L. I. } G. E. Huntley  
College Point, L. I. } W. Needham } Greenvale, L. I. } W. W. Griffin  
Pt. Washington, L. I. } H. Kramer } Fisher's Island, L. I. } E. M. & W. Ferguson  
Glenwood Landing, L. I. } H. Berg } Shelter Island, N. Y. } N. P. Dickerson  
Jas. Fyfe }

## CONNECTICUT

Greenwich, Groton, Stony Creek, Mystic, West Mystic, New London, Noank, Rowayton, Saybrook, Stamford, New Haven, S. Norwalk, Stonington, Bridgeport

## LONG ISLAND—SOUTH SHORE

Sheepshead Bay } W. Lang } Montauk } E. B. Tuthill  
Rockaway Point } P. H. Reid } Freeport } J. Carich  
Canarie } Sutter Marine Equip. Co. } E. Rockaway } S. S. Rhame  
West Sayville } F. Ockers } Bayshore } I. F. Muncy & Son  
Patchogue } W. R. Marran } Amityville } W. J. Ketcham  
Sag Harbor } John Murphy }

## HUDSON RIVER

W. 140th St., N. Y. C. } F. R. Welch } Green Island } S. O. Co. of N. Y.  
S. O. Co. of N. Y. } Albany } Albany Yacht Club  
Yonkers } Corinthian Yacht Club } Rensselaer } Bailey & Parker  
N. Y. } J. C. Anderson at Ger- } Van Rensselaer } Capt. Godfrey  
man's Yacht Club } Island Creek } Smith  
Tarrytown, N. Y. } Tarrytown Boat Club } Van Rensselaer Island }  
Nyack } New Hamburg } Greendale } Hudson } Highland Falls  
Poughkeepsie } Catskill } Newton Hook } Cornwall } Hyde Park  
Saugerties } Coeymans } Newburgh } Kingston (Rondout) } Stuyvesant

## NEW YORK STATE

Auburn } On Owaseo Lake } Penn Yan, on Keuka Lake } J. J. Elliot  
Skaneateles } on Skaneateles Lake } } M. N. Gavin  
Cayuga } on Cayuga Lake } } E. L. Geer  
Ithaca, on Cayuga Lake } W. A. Murray } Branchport, on Keuka Lake } Burch Bros.  
Lake } Champlain Bros. } } E. L. Parker Co.  
Watkins, on Seneca Lake } F. E. Johnson } Keuka, on Keuka Lake, Mrs. B. Young  
Lake } F. D. Fordham } Raquette Lake } Dennis Dillon  
Geneva } on Seneca Lake } South Bay }  
Dresden, on Seneca Lake } J. L. Sweigart } Sylvan Beach }  
Glenora, on Seneca Lake } F. H. Remier } Constantia }  
Lake } J. D. Tinsley } Bernhardt Bay }  
Cleveland }

## BARGE CANAL—ERIE CANAL DIVISION

Schenectady } Utica } Brockport } Lockport } Scotia  
Rome } Albion } Tonawanda } Amsterdam } Syracuse  
Medina } Buffalo } Little Falls } Rochester } Middleport

## BARGE CANAL—OSWEGO CANAL DIVISION

Fulton

## BARGE CANAL—CHAMPLAIN DIVISION

Ft. Edward, Mechanicville, Fort Miller, Hudson Falls, Fort Ann, Watford, Stillwater, Gansevoort, Smiths Basin, Comstock, Whitehall, Schuylerville

## LAKE ONTARIO

Carlton, Summerville, Newport, Sacket Harbor, Sea Breeze, Sodus Point, Point Pleasant, Charlotte, Henderson Harbor, Manitou Beach, Oswego

## LAKE ERIE

Buffalo } Dunkirk

## NIAGARA RIVER

Buffalo (foot Erie Street) } Tonawanda } No. Tonawanda

## ST. LAWRENCE RIVER

Cape Vincent } Clayton } Grindstone Isl'd } Fine View } Thousand Isl'd Pk.  
Alexandria Bay } Ogdensburg } Point Vivian } Chippewa Bay  
On the St. Lawrence River our own launch makes deliveries  
to storage tanks at summer homes along the river.  
Headquarters of launch at Clayton, N. Y.

## LAKE GEORGE AND ADIRONDACKS

Caldwell Inlet } Sabbath Day Pt. } Old Forge } Saranac Lake } The Hague  
Cleverdale } Raquette Lake } Tupper Lake } Lake Placid } Eagle Bay  
Pilot Knob } Blue Mt. Lake } Ticonderoga } Lake George } Kaatskill Bay

## LAKE CHAMPLAIN

Plattsburg, Vergennes, Vt., Alburg, Whitehall, Westport, Rouses Point, Maquam, Highgate Springs, South Hero, Vt., Port Henry, Burlington, Vt., Alburg Spgs, Maquam Bay, Isle La Motte Stn., Essex, Ticonderoga, St. Albans Bay, Vt.

## RHODE ISLAND

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East Greenwich } Wickford } Block Island } Warren } Oakland Beach  
Chas. R. Gray } Seaconnet Point } S. H. Stearns } Oakland Beach

## MASSACHUSETTS

New Bedford } Wellfleet } Woods Hole } East Boston } Fall River  
Provincetown } Haverhill } Gloucester } Dorchester } Hyannis } Newburyport  
Onset } A. J. Record } Provincetown } J. P. Dutra } Wellfleet } F. T. Organ  
Sandwich, Connell Fish & Freezing Co. } Woods Hole } Penance Garage

## NEW HAMPSHIRE

Lakeport (Winnepesaukee) } Portsmouth

## MAINE

Portland } Bar Harbor } Belfast } Rockland  
Bath } Kennebunkport } Boothbay Harbor } Eastport

Andrews Island } A. F. Racliff } Manast } John L. Stanley & Sons  
Atlantic } A. C. Smith } } W. H. Ward  
Bailey's Island } E. E. Sennett } McKinley, Cunningham & Thompson  
Bar Harbor } F. H. Parker } Medomak } M. A. Simmons  
Bass Harbor } N. E. Thurston } Mohegan Island } D. M. Davis  
Bay Point } A. D. Moore } New Harbor } S. Tibbets  
Beals } J. E. Wooster } Northeast Harbor } W. G. & L. F. Stanley  
Bernard } Spinney Bros. } North Haven } W. S. Hopkins  
Brooklyn } C. H. Beals } Orrs Island } S. J. Prince & Son  
Camden } Guy H. Parker } Owls Head } M. T. Jameson & Son  
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Corea } J. H. Hooper } Prospect Harbor } J. W. Stinson & Son  
Cranberry Isles } G. F. Gott } Robinhood } Williams & Brimlayer  
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Frenchboro } Machine Shop } Seal Harbor } Seal Harbor Fish Co.  
Friendship } W. H. Hooper Garage and } Sebasco } F. W. Ridley  
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Jonesport (West) } W. D. Stanley } So. Freeport } L. A. Dickson  
Matineus } C. E. Spurling } Southport } Ralph Thompson  
 } H. C. Pendleton } Southwest Harbor } S. H. Mayo  
 } F. L. Rice Motor Co. } Spruce Head } Chas. Burke  
 } F. W. Ross } } Leslie Thompson  
 } Jameson & Wotten } Starboard Creek } Allen & Co.  
 } J. T. Conley } Stonington } S. O. Co. of N. Y.  
 } Walter Hadlock } Swan's Island } S. E. Wilkes  
 } Hinkley Stevens Co. } } S. Morse & Son  
 } F. P. Smith & Co. } Thomaston } Dunn & Elliott  
 } J. W. Lamson } Tremont (West) } F. W. Lunt  
 } Mansfield Packing Co. } Vinalhaven } Sanborn & Arey  
 } The Mansfield Co. } West Small Point } H. Smith

# STANDARD OIL COMPANY OF NEW YORK

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating



## Regal Marine Engines

Have 18 years successful building behind them



The line is very complete, sizes ranging from 2 H.P. to 50 H.P. The engines can be equipped with any kind of ignition desired and are constructed to burn gasoline, kerosene or distillate.

Write for catalog and prices.

### REGAL GASOLINE ENGINE COMPANY

74 Pearl Street  
COLDWATER - MICHIGAN

Your Compass, Ammeter and Gas Gauge can be seen in the dark if the points were Radiumized with

### GLOWNITE

Put up in compact box with full directions to insure success.

OUTFIT A, \$3.50

Write for particulars

J. F. MANSFIELD  
9 Maiden Lane New York

### CUT PRICE CATALOGUE SENT FREE



Any—and Everything  
for a Motor Boat

E. J. WILLIS CO.  
85 Chambers Street, New York

## Cookery Afloat and Ashore

(Continued from page 31)

heavy pots on one side. This roomy grate will hold six large cooking utensils. It can be set up in less than one-half minute and fits in a canvas case 4 x 36 inches. It weighs about ten pounds. A canvas case is furnished with each stove.

"This stove with its revolving grate enables you to keep your body further from the fire, protecting your hands, face and clothing, and at the same time enables placing the food just as near the fire as desired. Adjustable legs make it easy to cook over any size fire, enabling you to keep the grate level."

"The Red-E Folding Broiler Stove, manufactured by the Red-E Company, Columbus, Ohio, is a combination of folding stove and broiler, but without the disadvantages of either. It will do all and more than a folding stove will do. At the same time it is simpler, more easily set up, and folded, much more compact, lighter in weight, and will take any length fuel. The steel grate is attached to the back of the stove by two special sliding hinges. The end leaves, also, are hinged to the back. When set up the grate drops down in its sliding hinges and slips into two supporting hooks on the end leaves. That is the whole job of setting up. It is practically automatic and takes about two seconds.

"The stove is set up with the back toward the wind. A hole under the back lower edge, as small or as large as you wish, provides perfect draft and control of the fire. The action of this draft is to draw the heat up evenly to all parts of the grate. Since the grate rests below the top edge of the stove the heat is retained under and around the utensils where it is wanted. No heat is wasted. None blows away. The cook works at the back of the stove. If there is any smoke it blows away from him. He is protected from the heat of the fire and can work comfortably. He does not need extra long handles for skillets, forks or spoons. It is a mighty different job from cooking in front of an open fire or over an ordinary broiler. You can begin cooking without waiting for the fire to burn down to coals. No matter how hard the wind blows, the heat stays where it is wanted, and the smoke blows the other way.

"The stove takes wood of any length. There is no need to do a lot of chopping, because the fuel is fed in at the open side and sticks are shoved in as they burn off. Since there are no legs the stove can be set up anywhere. If you wish you can move stove, utensils and all back from the fire and slow down on the cooking.

"Because of the efficient and practical way in which the stove works, it is easy to prepare a complete hot meal for a dozen people in less than half an hour. Here is a sample program: When the fire is started, put on the coffee pot and anything that is to be boiled. If there are canned goods, simply open the cans, turn back the tops to serve as handles, and set them on. Take them off and place them so they will just touch the back of it or one of the ends. They will keep on simmering. When the fire is burned down to coals put on the steak or chops. Lay the meat on the grate. It will broil as perfectly and deliciously as any chef could do it over his grill. When it is done everything will be hot and ready at the same time.

"There is also an oven attachment for baking and roasting, so made as to hook on the back of the stove. Hot biscuits (Continued on page 68)

Advertising Index will be found on page 100

40 H. P. VALVE IN HEAD

\$1300

COMPLETE WITH  
ELECTRIC STARTER  
AND REVERSE GEAR

KNOX MOTORS ASSOCIATES, Springfield, Mass.

**Baldrige Reverse Gear**

You can get a Baldrige—the original all-enclosed, time-tested reverse gear—now—for immediate delivery. Booklet "For the Man in the Boat." Free. THE BALDRIDGE GEAR CO. Boston, Mass.

## Quayle Oil Engines

FOR MARINE SERVICE

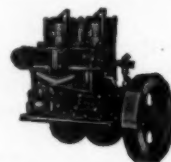
COMMONWEALTH MOTORS CO.

326 W. Madison St. Dept. E-1 Chicago, Ill.

## GULOWSEN "GREI" OIL ENGINE

Consumes 1/4 pt. of crude oil or less per H.P. per hour. Heavy duty. No carburetor or valves. Started in 30 seconds. Sizes 4 to 360 B. H. P.

Write today for catalog  
Gulowsen Sales Corp., 17 State St. New York



## R E X

Combination Motor  
Stands For  
Simplicity, Dependability  
and Economy

Neponset Eng. & Mach. Co.  
Neponset, Boston, Mass.

## DROP FORGINGS

Forgings Hammered from Billets

MAKERS OF QUALITY FORGINGS  
FOR USE IN MOTOR BOATS AND  
MARINE ENGINES OF ALL KINDS

John Obenberger Forge Company  
Milwaukee, Wis. Plant, West Allis, Wis.



THE HUNTER-JOHNSON CO., 289 California St., San Francisco, Cal.  
Distributors for Pacific Coast

ENJOY  
the LURE  
of the  
WAVES

K D or  
Complete

RICHARDSON BOAT CO.

No. Tenwards, N. Y.

## SENSIBLE Safety Suit

The only ventilated and sanitary safety suit. Demonstrated and sold at NEW YORK CITY by Abercrombie & Fitch Co., Brooklyn Bros., Browning, King & Co.

Phila., Pa. and Washington, D. C. Jacob Reed's Sons  
Write today for full details to

ALFRED VARLEY SIMS, Gen. Sales Agt.  
2 Rector St., New York City Phone: Rector 7565



### America's Premier High Speed Marine Engine

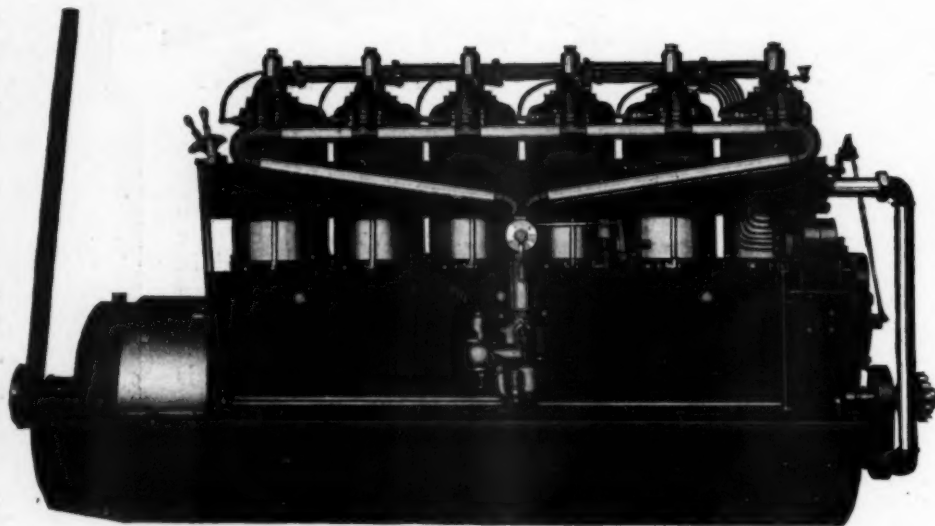
The M. & T. Model J-6 combines within itself the qualities hitherto found in the leading high-speed engines of all types. Bore,  $7\frac{1}{4}$ " ; stroke, 9 ; develops 300-400 H.P. at speeds from 1000-1400 R.P.M. ; weight only 3400 lbs.

MURRAY & TREGURTHA CORP.  
ATLANTIC, MASS.



*When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating*

## Making Real Friends of M. & T. Owners



MODEL E-6, 6 1/2" x 8", 60 H.P.

The dependable service rendered by every Murray & Tregurtha engine paves the way to friendship with its owner. But, what makes him a real partisan, is the lasting interest we take in every power plant delivered by us. Aside from all the regular guarantees, which we give, we follow up each M. & T. engine and see that it gives satisfactory service during its entire life. The owner has at his disposal continually the entire personnel of our Service Department.

When an M. & T. owner builds a new boat, he inevitably buys another M. & T.

*Let us tell you why*

**Murray & Tregurtha Corp.**  
**Atlantic, Mass.**



# The A. C. Electrical Manufacturing Co.

DAYTON, OHIO. U. S. A.

Exclusive Manufacturers of

## "DAYTON"

### Motor Boat Lighting and Ignition Systems



"Dayton" 30 Light Outfit

**Six—Twelve—Thirty Two Volt Systems. Four to Thirty Lights**

The "Dayton" Lighting Systems have been the Standard with the Motor Boat Trade for over Twenty Years. Thousands of them are in daily use, giving excellent satisfaction.

Write for Bulletin No. 65—Now

## Strong Where Strength Is Needed Durable Where Durability Counts

**J**OES Gear is strong enough to keep a big, husky motor under perfect control, and yet, like the trained athlete, it depends on strength and endurance rather than bulk. It's a sturdy, compact, well built gear that enables you to reverse a heavily loaded work boat from full speed ahead to practically full speed astern smoothly, quickly and without let-up, even in the face of rough weather.

### JOES REVERSE GEAR

*Heavy Duty Duplex Type  
for Work Boats*

Send for catalog illustrating and pricing Joes Gears for every need and speed; also Safety Rear Starters, One-Way Clutches, etc.

**The Snow & Petrelli  
Mfg. Co.**

156B Brewery Street, New Haven, Conn.

Agents: J. King & Co., 10 Church Row, Limehouse, E. London, England; L. H. Coolidge Co., Seattle, Wash.; W. E. Goucheaux Mfg. Co., 631 Arch St., Philadelphia, Pa.; A. B. Williams Machinery Co., Toronto; Sutter Bros., 44 Third Ave., New York City; Service Station, Foot of East 92nd St., Brooklyn, N. Y.; Arendahl Motor & Machine Co., Arendahl, Norway.



**88%  
Reverse  
Speed Ratio**

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating

**LEWIS C. SUYDAM**

*Successor to*  
**RIDER & SUYDAM**

Boats built to order.

Any size or type from own plans or special designs to meet your ideas.

Yard—Old Mill, Brooklyn, N. Y.

**Mullins Steel Boats Can't Sink**

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**Cookery Afloat and Ashore**

(Continued from page 64)

will be done to a turn in 12 to 15 minutes. Potatoes will be ready in 40 minutes. It is large enough to take a good sized roast or two dozen biscuits at one time. Baking can begin the minute the fire is started and if there is no baking to do, it is a good place to keep things warm. The top of the oven is hinged so that it can be opened to inspect the baking or to put in food. Folding steel legs strongly riveted hold the oven level, if it is removed from the stove and set to one side. The oven is 18 inches long and 8 inches deep.

"The stove when folded is 18 inches long, 10 inches wide, while the oven is the same size. The stove is about an inch thick and the oven half that thick."

"The Hackerson Original Auto Kitchenette, is manufactured by Hackerson & Company of 1525 North Wells Street, Chicago. This compact equipment has space for ice, edibles, stools, and cooking utensils, and it makes a comfortable table for six. It is the embodiment of usefulness and convenience, and holds everything a motor boating party requires to make the cruise enjoyable. It permits you to cruise anywhere without thought of where to get dinner, or what kind of dinner may be secured. The Kitchenette has been designed to meet the comforts of those who like to partake of motor boating lunches afloat or ashore.

"The cooking can be done at home if desired. The Kitchenette will carry the already prepared refreshments in good condition to any destination. No unpacking, no mashed or mused food to contend with. It does away with the trouble of getting lunch. It takes only a few seconds to convert it into a table to eat on. Lift up the front and back covers and a simple automatic device will hold them in position, then pull out the board V-shaped ends, which are attached to the bottom and you have a table 30 by 38 inches, with ample projection on both sides to prevent tipping.

"It has one drawer with a galvanized iron bottom, with an  $\frac{3}{4}$  inch flange along the front side, so that when closed it

makes the lower compartment air tight and dust and water proof. When the drawer is pulled out, it is held in its proper place by a chain at each end. The lower compartment has a galvanized iron lining with a good insulation between the wood and iron. When the drawer is closed it fits tightly on top of this lining. The ice tank is made to go inside. The tank can be taken out or pushed to either end to suit. The tray makes a tight cover for this tank. When tray and tank are put together they make the same height as the lining, and the drawer rests on top of it. The tray is  $3\frac{1}{4}$  inches high, and can be used for many purposes. It is made of the best material money can buy. The cover is a 3-ply veneer, coated with water-proof varnish. It will not split or warp. All material is iron bound and clinched. The hinges are clinched on, no screws to work loose."

The Florence Oil Cook Stove, manufactured by the McClary Manufacturing Company, London, Ontario, Canada, is clean because of the absence of wicks or valves, this insures its also being odorless, not subject to clogs, leaks or messy processes of renewal.

"The principle on which it is constructed generates oil-gas and it is this that one burns in a Florence. At full heat it gives a smokeless, clean, blue flame intensely hot—hotter than coal; much hotter than any other oil flame. This can be regulated—lowered to exactly the degree of heat needed at the moment. The heat is closed up under the cooking, with no wastage out into the galley.

"From the tank away at the end of the stove, a feed pipe is kept filled, into which the burners are lowered to be lighted. The oil feeds only as fast as consumed. When not in use there is no contact between burner and oil. The flame cannot creep up; being wickless, once it is set, the flame remains exactly so until changed or until the fuel is exhausted. A mantel or oven or both may be added to this stove."

**To Victory on Victory II**

(Continued from page 35)

Our thoughts now turned to Kodak, which apparently was the craft to be most feared. She had a crew of hardened salts, so we knew we could expect no breakdown from this source. We had to allow Kodak 21 minutes handicap in the 100 miles, and as the relative speeds at the time of passing Lloyds showed us we should reach the finish 30 minutes ahead of her we knew that we must keep going and going straight in order to win.

The gentle sou'wester that was blowing at the time of the start had been increasing with considerable force, so that by the time we had passed the sailing yachts competing also in a race to Block Island, which had been given an hour's start on the motor craft, they began to put their decks under, several of them making as good time as the power-driven boats.

With the increase in the wind there was a corresponding rising in the size of the sea and, being on the starboard quarter, it called for good helmsmanship to keep the racers on their course. Our course which we had previously laid out required after passing close to Lloyds Point that we shift it one-half point to the south and pass just inside of Eaton's Point Can Buoy. The other boats of the fleet chose a more northerly course which kept them further out in the Sound.

Old Glory IV was still leading and Gardenia followed close in her wake. Marilene II by this time had begun to gain a little and had drawn up on the two leading boats, but followed along in the same course chosen by Old Glory IV. These three craft were now less than a length apart and held this position after Eaton's Point was abeam, which was at 1.53 p.m.

The distance from Eaton's to Old Point is  $35\frac{1}{2}$  statute miles. Only a fraction of this distance had been covered when we noticed that both Gardenia and Marilene II had drawn up and passed old Old Glory IV, evidently due to the fact that the V-bottom hull of Old Glory IV was making bad weather of the following sea. Her crew appreciated this and she sheered off to starboard almost on right angles and ran to the lee of the Long Island shore and followed down the beach all the way to Hortons. While this course gave smooth water, yet it increased the distance which Old Glory must sail. However, the net result of choosing this course was probably to Old Glory's advantage, although Victory passed her off Mattituck. Yet our lead was not long lived.

(Continued on page 92)



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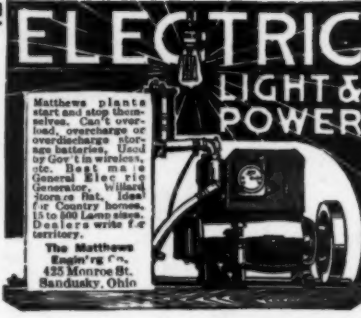


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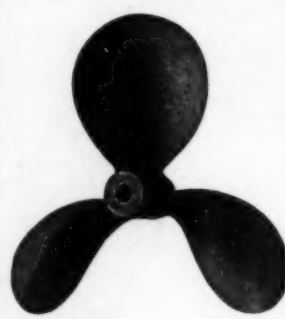


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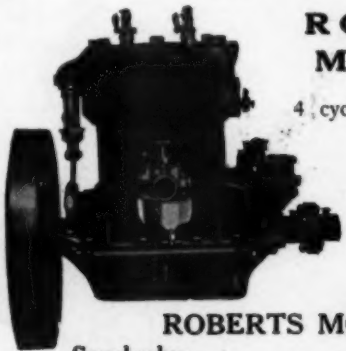


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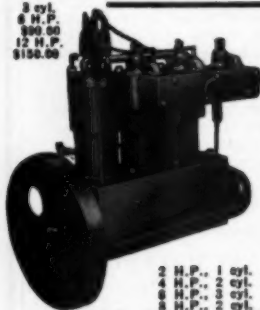
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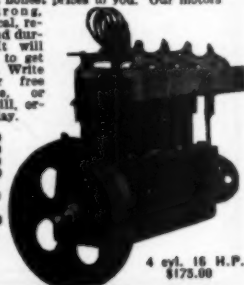


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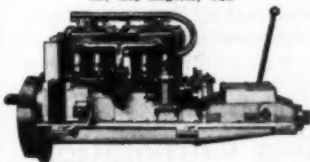
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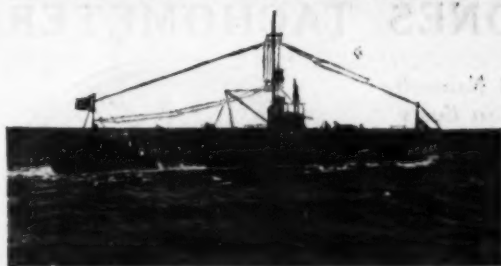


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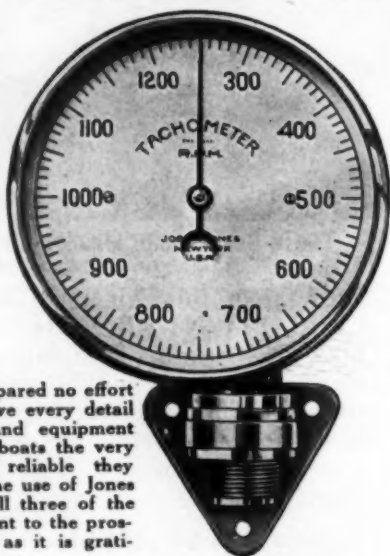
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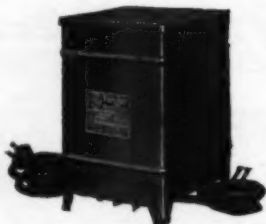
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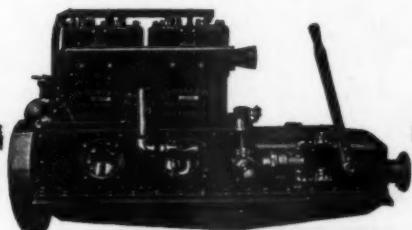
For Commercial Boats and Cruisers

### Model D-4, Medium Heavy Duty

36 Horse Power Bore, 4 1/2 inches Strokes, 8 inches

Write today for full description and prices

The Gray & Prior Machine Co.  
56 Suffield St.  
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## Drop Forged WRENCHES

are good wrenches, the sort of wrenches boatmen need. Page Storm Drop Forged Wrenches are dependable; they stand the test of the most severe conditions; they stand usage which would destroy an ordinary wrench. It is dangerous to depend on breakable repair equipment. Protect yourself by using Page-Storms Drop Forged Wrenches.

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The same quality and precision of workmanship which distinguish Page-Storms Drop Forged Wrenches go into P-S Drop Forgings. We are prepared to execute the most intricate requirements; testing the finished product 5/1000 or closer. Ask us for information on our Reliable Drop Forging Service.

Page-Storms  
Drop Forge Co.  
Chicopee, Mass.

When writing to advertisers please mention MoToR BoATING, the National Magazine of Motor Boating





Edmond's Balsa Life  
With Ilanasilk Collar

## Government Approved Life Jackets for ALL Vessels

We are manufacturing and can make prompt deliveries on the Edmonds Ilanasilk Collar type life jackets recently approved by United States Steamboat Inspection Service for use on all vessels.

We also manufacture yacht cushions, canoe cushions, buoyant pillows, mattresses, ring buoys and life preservers filled with the remarkably efficient Ilanasilk (specially processed Prime Java Kopak).

Quotations and full information on request to

Robinson Roders Co., Inc. (Marine Dept.), 445 Broadway, New York, N. Y.

## CHAS. CORY & SON, INC.

New York—290 Hudson St.

ESTABLISHED 1845

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Electrical and Mechanical Telegraphs.

Marine Electric Lighting Fixtures and Wiring Accessories.

Special attention given to Yacht and Motorboat electrical equipments, including fixtures, wiring accessories, bells, annunciators, push buttons, etc.

Mechanical Communication Appliances, including engine telegraphs, gongs, gong pulls, sounders, voice tubes, fittings, etc.

Complete electrical and mechanical installations for all classes of vessels solicited.

## OBERDORFER



### BRONZE GEARED PUMPS

The successful operation of your engine depends very largely on the efficiency of the cooling system, the oiling system and the fuel feed.

Equip your engines with the ever-reliable Oberdorfer Pumps and you can forget all about your cooling, oiling and fuel feed systems. Their action is entirely automatic—the speed of the motor determines the supply. A feature of utmost importance is the fact that the Oberdorfer will never over-feed nor under-feed.

Oberdorfer Bronze Geared Pumps are standard equipment on Kermath, Red Wing, Gray,

Lathrop and other good marine motors.

Send at once for the Oberdorfer pump booklet.

M.L. OBERDORFER  
BRASS COMPANY

812 E. WATER ST.  
SYRACUSE, NEW YORK



## ZUNDEL

### HERE'S A WINNER

Zundel Loud Sounding Electric Horn, the only genuine marine type electric vibrator horn. Waterproof. Sound carries further than any auto horn. Polished brass bell, black enameled base. Operated by dry cells or storage battery.

Retail price \$8. Discount on quantities. We carry the most complete assortment of motor boat supplies in New York.

Special attention given to commercial, export and mail orders. Write for catalog to-day—its free.

R. W. ZUNDEL CO., Inc.  
47 Whitehall St., New York City  
Phone: Bowling Green 9157



## BOAT SUPPLIES

## If You Want

to know anything about boats or boating, about the marine market or the marine industry, write the editor of MoToR BoatinG for information.

MoToR BoatinG is the leading magazine of the marine field—leading in circulation and advertising value as well as in authority and interest. It exists for the service it can render to boat owners and to members of this industry.

Let it be of service to you

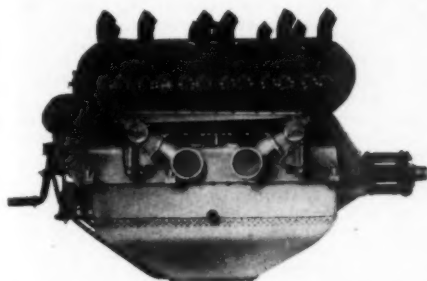
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119 West 40th Street

New York

## LANCIA AVIATION MOTOR

Made at Turin, Italy.

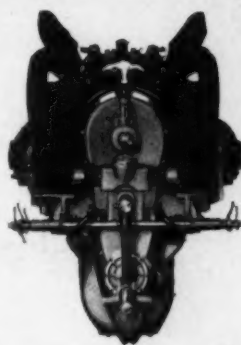


Tested at Dayton, Ohio, by U. S. Government. 328 brake Horse Power at 1,380 R. P. M. for ten consecutive hours. Negotiations ended because of armistice. Cylinders set at an angle of 30° instead of 45° as on other aviation motors. Suitable for anyone wanting real speed in hydroplane, aeroplane, or sea sled.

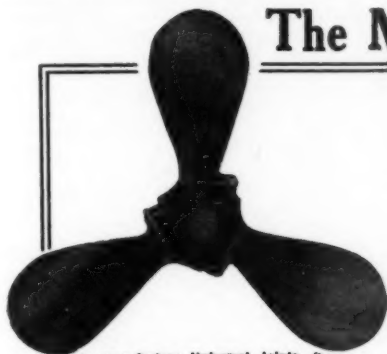
Get all particulars as to price, delivery, oil and gas consumption from

Thomas E. Adams

25 East 57th Street, New York City



## The Michigan Reversible Propeller Wheel



We manufacture Universal Joints, Couplings, Stern and Thrust Bearings, Ball Races, Power Blide Pumps, Motor Accessories.

The lack of a reverse gear will not affect the safe and convenient operation of your boat if it is equipped with the *Michigan Three Blade Propeller Wheel*. The reversing propeller wheel is just as effective as the reverse gear—yet it takes up no room in the boat and costs a great deal less money.

The man who operates a boat without any means of reversing promptly in case of emergency is taking a pretty long chance on his life and property. Accidents will happen, even to the most careful pilot if the boat is not *entirely under instant control*. Besides the element of danger there is the convenience offered by the reversible propeller in making landings. No more guesswork with the *Michigan Reversible* on board. You can make your landing without that damaging bump. *Play safe this summer.*

SEND FOR INFORMATION

**MICHIGAN WHEEL COMPANY**

C. J. LITSCHER, Pres.

GRAND RAPIDS

1240 Monroe Ave.

MICHIGAN

### Improved Motor Boat Closet

Figure 1404

Dimensions: 18 x 18 x 11" high to top of bowl; 2 1/2" cylinder. For above or below water line.

The best little closet on the market today, possessing many of the advantages of the large size toilet. All brass and porcelain. Oak seat and cover. All prices subject to market advances, which are continually changing.



### The J. H. Curtiss Co. Pioneer Specialists in Marine Sanitary Fixtures

Since our advertisement appeared in the first issue of *Motor Boating*, December, 1907, hundreds of Curtiss fixtures have been installed in motor cruisers and yachts of all sizes, including some of the finest boats launched within this period.

The Curtiss line is exceptionally complete, varied in type, size and price to meet every possible requirement. Each model has been designed in accordance with our wide experience in boat work and can be depended upon in quality, service and durability no matter whether it is our highest or lowest priced model.

"PRICES ON APPLICATION"

### With Pump

Cock on pump swings upward, thus preventing breaking of bowl. Soap-dish is porcelain and removable.

No. 5  
Height, 19 in.  
Width, 19 in.  
Depth Closed, 6 inches.  
Quartered Oak Case, or Mahogany Case.

Lining and Fixtures Nickel-plated. Porcelain Bowl. Mahogany or Quartered Oak Case.



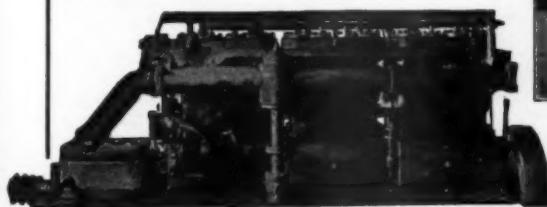
Fig. 1392

THE J. H. CURTISS CO.

2 South Street, New York

## 20th CENTURY Gasoline Motors

2-Cylinder—6 1/2" x 8 1/2"—15-20 H.P.—400 R.P.M.  
4-Cylinder—6 1/2" x 8 1/2"—40-50 H.P.—400 R.P.M.  
6-Cylinder—8 1/2" x 9 1/2"—45-75 H.P.—400 R.P.M.  
Strictly high grade four-cycle engines, built for heavy duty service.



65 ft. x 14 ft.—JINETTA—J. H. Becker

Most yachtsmen know of the satisfaction given by yachts designed, built and powered by us; our experience is at your command; plans on file of all size yachts.

Send Us Your Inquiries

NEW YORK YACHT, LAUNCH & ENGINE CO.

::

Morris Heights, New York City



## Know Your Engine

Intimate acquaintance with your engine can only be had when you equip it with a Tachometer.

This little instrument will instantly tell you when your engine is not up to the high point of efficiency of operation and fuel consumption. You should know at once when there is a change in engine speed and be able to make adjustments easily and quickly without guess-work.

## Reliance Tachometers

accurately indicate each change in engine speed and enables you to make adjustments intelligently.

This knowledge places you in a position to obtain the utmost efficiency of engine performance with the lowest fuel consumption.

Each instrument is individually calibrated to insure accurate reading over the entire scale.

There is nothing to get out of order, or to be affected by magnetic or atmospheric conditions.

Reliance Tachometers are built to meet every range of speed up to 3,600 R.P.M. with and without counter.

Bulletin 102 describes the various models, and will be mailed on request.

**NELSON INSTRUMENT COMPANY**

7 Elkins Street, Boston, Mass.

## Hints on Keeping the Motor in Shape

(Continued from page 38)

Wait a few moments for the carburetor float chamber to fill then turn carburetor needle valve about one turn open, and engine is ready to start. The proper mixture is obtained by adjusting the needle valve as the case may require. If black smoke and red flame is observed, the mixture is too rich, if yellow flame is shown, the mixture is not rich enough. After a deep, blue flame has been obtained, open the throttle gradually. If the engine misses explosions and there is no black smoke or red flame shown from exhaust, it is evident that the mixture is not quite rich enough. Open the needle valve until firing is regular and there is no black smoke from exhaust. Next try controlling engine speeds from throttle. If the engine runs at low speed and fires regularly, but will not do the same at high speed, change the tension on the spring behind the auxiliary air valve by means of adjusting screw until a correct adjustment is found.

On the cruiser and runabout type all crankshaft bearings, connecting-rod bearings, and camshaft bearings are oiled by a constant-level splash system, and the cylinders are oiled by a pump through sight feed glasses mounted where the feeding of the oil can be readily observed. Oil is circulated through the system by means of a pump which draws oil from the reservoir in the bottom of the base and pumps it through the oil cooler placed at the after end of the engine. This cooler is cold-water jacketed and cools the oil before it is forced through a double discharge pipe, one branch of which connects with the sight feed glasses through which the oil passes to the cylinders, and the other supplies the pipe in the base, which sprays oil on the connecting rods, and keeps the oil pockets into which the connecting rods dip, well filled. The oil reservoir in the bottom of the base should be kept well supplied with oil at all times. The oil level gauge in the rear of the crankcase shows the depth of oil in the reservoir. Enough oil should be put into the engine to bring the oil well up to the top of the glass in the oil gauge. All oil should be drawn off occasionally and the oil reservoir wiped clean of all sediment, and the oil supply replenished with clean oil. This may be done by removing the breather tube cap and pouring the oil into the funnel-shaped mouth of the breather tube. After starting the engine be sure the oil is feeding through the sight feed glasses. This will indicate that the pumps and oiling system are working correctly. Never wipe out the base with waste for it is apt to leave small particles of lint which will work their way into the lubrication system and cause trouble.

## Coeur d' Alene Regatta

(Continued from page 21)

in a fashion that brought the crowd to their feet. Ginger is a 17-foot craft, a V-bottom hull carrying a four-cylinder, four-cycle Universal, of 3 3/4-inch bore and 4-inch stroke.

The regatta mystery boat, Freckles, built by P. C. Mitchell, of Coeur d'Alene, and rated as a sure winner, did not get its name engraved on a single trophy. The craft lacked adjustment rather than power or style, and another year may find one or two of this year's winners riding its waves.

The events of the second day were slower than those of the first, owing to a heavy breeze.

The summary of the four motor boat races is:

Entry	Regatta Derby—Four Miles	Time
Tipperary	.....	7:10
Thoroughbred	.....	7:10 1/2
Swastika	.....	8:11

### Spokane Cup Race—Four Miles

Ginger	.....	7:24
Freckles	.....	7:50

### Idaho Cup Race—Four Miles

Thoroughbred	.....	9:45
Imperator	.....	9:52
Mary Calla	.....	10:01

### Regatta Handicap—Eight Miles

Imperator	.....	17:16
Thoroughbred	..... (Handicap, 1 minute 45 seconds)	
Vogler Boy III	..... (Two laps to one of others)	



If you have ever experienced engine trouble when miles from shore, you know the annoyance and danger which a Boyce Moto-Meter would have saved you.

The minute the engine starts overheating—from any cause whatever—the Boyce Moto-Meter gives instant warning: in plenty of time to make tracks for the nearest landing before trouble develops.

Then, too, it makes for economy, as a motor kept at the most efficient temperature saves gasoline.

The service performed by the Boyce Moto-Meter makes it the most indispensable part of a motor boat's equipment.

THE MOTO-METER CO., Inc.  
LONG ISLAND CITY, N. Y.



#### Use as follows

For Deck and Hull Seams of Yachts and Motor Boats

#### USE—No. 1, Extra Quality

Black, white, yellow or mahogany color. Give black the preference; it is more elastic and satisfactory in every way.

Specified by all first-class designers, and used exclusively by all the prominent builders.

Use No. 7, Soft Quality Black, White or Yellow.

For waterproofing canvas for covering Decks, Tops of Cabins, Canvas Boats, Canoes and Seaplanes. It not only waterproofs and preserves the canvas but attaches it to the wood and with a coat of paint once a year will last as long as the boat.

Waterproof Liquid Glue is used for the same purposes as No. 7, Soft Quality.

It is ready for use and requires no heating; simply open the can and paint it on, like ready-mixed paint.

This glue will also attach canvas, cork, felt, rubber, leather and linoleum to iron, steel or wood. All the prominent builders of seaplanes used this glue in combination with cotton cloth between the veneer in diagonal planking. It is also used for covering hulls with canvas.

Special Marine Canoe Glue. Best Filler for Canvas, Black, White and Yellow.

Our 35c emergency cans made a big hit. Every canoeist should carry one; it is as valuable to him as a repair kit to a bicyclist or an automobilist.

Sent by mail on receipt of 40 cents in stamps. Canada 47c.

For Ships' Decks Use

No. 2, First Quality Ship Glue

No. 3, Special Navy Glue

All put up in 1, 2, 3 and 5-lb. cans; also 14, 28, 56, 112-lb. boxes, either tin or wood.

## JEFFERY'S MARINE GLUE

### Is your boat water-tight?

If not a timely application of Jeffery's Marine Glue will remedy these defects, and insure a worry-proof season insofar as these details are concerned.

It is not sufficient to use mere *glue*. You must use the best—*Jeffery's Waterproof Glue*—the choice of knowing boatmen the world over.

If your dealer handles standard products, he handles Jeffery's. If he hasn't it in stock he will get it for you. No other is just as good. *Wait* for Jeffery's, if necessary.

Two valuable books, "Marine Glue, What to Use and How to Use It," and "How to Make Your Boat Leakproof," will be sent to you on request. Write for them today.

L. W. FERDINAND & CO.

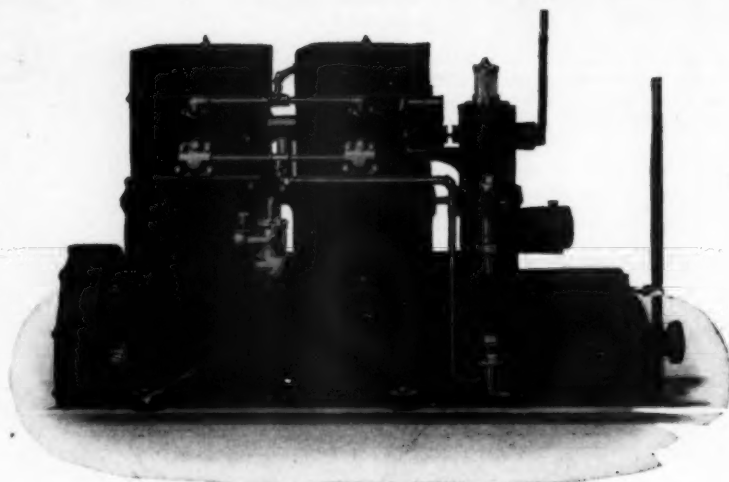
152 Kneeland Street

Boston

Mass.

# DUPONT MOTORS

◆◆  
4-Cylinder  
4-Cycle  
40-H.P.  
750-R.P.M.  
Valve in  
Head  
Equipment  
Built In  
◆◆



◆◆  
Entirely  
Enclosed  
Self-  
Lubricating  
Every Part  
Accessible  
From One  
Side  
◆◆

MODEL D-F-IV—Port View

ALL ENGINES OF OUR MANUFACTURE WILL HEREAFTER BE KNOWN AS

## DUPONT MOTORS

We Sell Direct. We Guarantee Satisfaction or Your Money Back.

DELAWARE MARINE MOTOR CO  
Commerce Street, Wilmington, Del.

### Rochester "Built-Rite" Boats

There is an individuality about the Rochester 40 ft. Cruiser that appeals to the boatmen who appreciate roomy comfort, attractiveness, seaworthiness, convenience in every detail and reasonable speed. We are building this boat in a strictly high class manner at an interesting price.

Write us for details.

ROCHESTER BOAT WORKS, Inc.

CHARLOTTE STATION

ROCHESTER, N. Y.



**READ** what one  
Motor Boatman  
says about the Motor  
Boating Practical  
Handbooks:

Price, \$1.25 per Volume  
\$6.00 per Set of Six Volumes

See complete table of contents  
of the Handbooks on page 90

Philadelphia, April. 12th., 1919.

Mr. Charles F. Chapman,  
Editor.

Dear Sir:-

Enclosed you will find sixteen cents in stamps which was the cost of sending Practical Motor Boating Books to me. I am very well pleased with my set of books and I think anyone who is interested in this line of work should have a set. They contain more information about this line of work than any other books I have read on the same subject. Also every subject in the books is clear and understandable.

Yours respectfully,

*John S. Gunn*  
4113 Lancaster Ave.  
West Philada. Penna.

# What the Stop-Watch tells

THE performance of your motor depends greatly upon the sort of lubricating oil you are using.

Some oils deposit more carbon than others, but the amount deposited matters not so much as the amount that sticks to the cylinders.

Paraffine in an oil has a tendency to form a sticky gum in the combustion chamber which collects the free carbon. The heat of the engine hardens the carbon thus collected, preventing its escape through the exhaust. With no paraffine there is less carbon retained.

Southern oils of asphalt base contain no paraffine, consequently more of the free carbon is blown out with the exhaust.

SUPREME AUTO OIL is manufactured from asphalt base crude and *leaves less carbon*, at the same time giving perfect lubrication.

## Gulf Refining Company

General Sales Offices: Pittsburgh, Pa.

New York  
Atlanta

District Sales Offices:  
Philadelphia  
New Orleans

Boston  
Houston

There is MORE POWER  
THAT GOOD GULF GASOLINE  
AND SUPREME AUTO OIL

GULF  
REFINING  
COMPANY





## Put it up to a Yale Hoist



**Y**ALE Spur-Gear Hoists, suspended from "Brownhoist" Steel-Plate Trolleys, on overhead tracks, are ideal for lifting and moving loads.

For handling engines, parts, and heavy bulky equipment—the Yale Spur-Gear Block enables one man to quickly, safely and easily handle loads that otherwise would require the labor of a gang.

With both hoist and trolley of special steel construction safety is assured.

**'From-Hook-to-Hook-a-Line-of-Steel'**

Catalog 18D tells all—or ask your Machinery Supply House.

**For a Factory Locking Equipment  
use a Yale Master Key System.**

*Write for Particulars*

**The Yale & Towne Mfg. Co.**

9 East 40th Street

New York City

## Carl Fisher Revolutionist

(Continued from page 14)

Man does not live by bread alone,—at least this has always been Fisher's theory of life,—and consequently his interest in sport began to make itself manifest coincident with his initial business success.

Despite Fisher's multifarious activities, his love of the water, born in the days of the old swimmin' hole near his birthplace, was still predominant within him, and, accordingly, when in quest of genuine relaxation, he spent his hours in the cool purlieus of White River, north of Indianapolis. Here he launched his first boat, a small gasoline craft that he christened Eph, in memory of a favorite dog, the initial craft of a series of thirty or forty that he has owned since, culminating in the swift 30-mile-an-hour express cruisers that are his favorites today. Next to motor boating, he valued swimming and canoeing, and one of the greatest triumphs of his early career was when he won the trophy in a half-mile race conducted under the auspices of the Indianapolis Canoe Club, against a strong field.

Meanwhile Fisher had not neglected his business, with the result that it was leading a highly prosperous existence and establishing the foundation for still greater success. When opportunity knocked on the door in the form of a discouraged inventor who had vainly endeavored to interest scores of other people in a system for storing acetylene gas in tanks for purposes of automobile lighting, Fisher was ready for it and gave the idea a practical test. Several mechanical difficulties had to be overcome, however. These were solved by patient experiment, and the apparatus finally reduced to practicable form. A small company was formed, with Fisher and the man who was destined to become his best friend and lifelong business partner, James A. Allison, as chief stockholders, and the manufacture of compressed gas in portable tanks began. Thus was inaugurated the Prest-O-Lite Company, destined to rank as one of the largest and strongest institutions in the automobile industry.

The funds acquired from Prest-O-Lite enabled Fisher to pursue on a larger scale his three favorite sports, boating, ballooning and automobile racing. He built several boats of the Eph series at Indianapolis and at St. Joseph, Mich., where he established a summer home, and later started the construction of a series of larger craft known as Raven. In one of the latter he journeyed down the Mississippi River and, crossing the Gulf of Mexico, went round the tip of Florida into Miami, obtaining his first glimpse of the city that is now his permanent home and the harbor of most of his interests. He instantly fell in love with the ideal climate of Miami, its wonderful stretch of cruising waters, and its picturesque tropical surroundings, and marked it upon his mental chart as a spot to visit again, though at the time he did not tarry long, being called back to Indianapolis by the demands of business.

It was in the realm of automobile racing, however, that Fisher achieved greatest distinction during this period, promoting, with James A. Allison, A. C. Newby and Frank H. Wheeler, the Indianapolis Motor Speedway, which has now stood for ten years as the scene of the greatest speed contests in the world.

With the Indianapolis Speedway in successful operation, Fisher directed his attention toward another phase of automobile activity—good roads. One evening he called a meeting of Indiana automobile manufacturers and business men and launched a project to build a coast-to-coast highway, designed to stimulate interest in good roads construction throughout the United States. The enterprise thus born was later called the Lincoln Highway, now well on the road toward completion, a monument to Fisher's vision and public spirit.

Continued hard work was beginning to tell on Fisher, and he bethought himself of Miami, that semi-tropical paradise to which he had cruised several years before, where the very atmosphere seemed restful, and the broad panorama of sunlit waters gladdened the eye. Arriving in Miami, he found the town greatly changed. Others had heard of its virtues and a cosmopolis of health and pleasure seekers from all parts of the world was in the making.

Accurately forecasting the tremendous development that

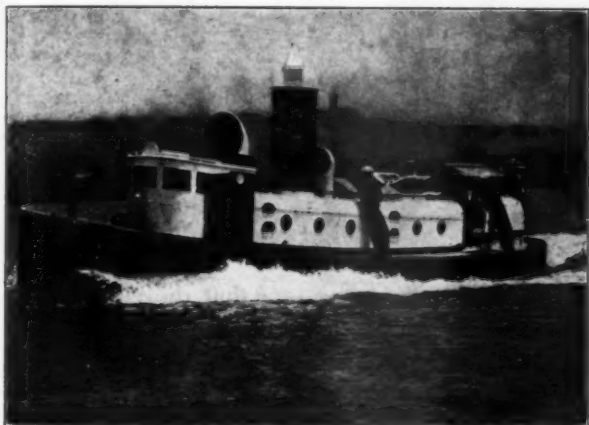
(Continued on page 86)

# TALBOT

Trade Mark Reg. U. S. Pat. Off.

## STEAM POWER PLANTS

*Using the cheapest grades of  
crude oil as fuel*



Talbot Power Plants are not only suitable for Naval vessels but also for pleasure and commercial vessels of 50 ft. and up.

### COMPACT

A 50 H.P. Talbot Steam Power Plant occupies space 4' x 4' x 4', including both boiler and engine, and weighs only 2,500 lbs. A plant capable of 800 H.P. may be installed within an over all length of 10 feet for machinery and working space.

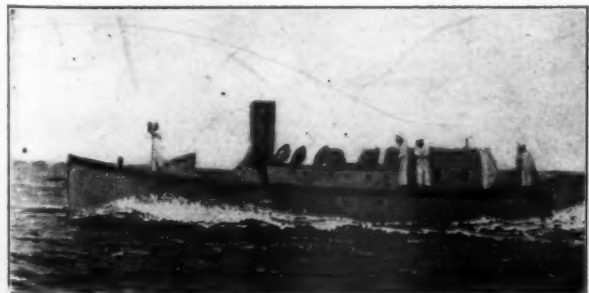
### ECONOMICAL

The average cost of operation is about one-tenth the cost of operating a gasoline engine. Anything that will burn may be used for fuel, solid or liquid. Particularly designed for liquid fuel of any kind—crude oil preferred.

Write today for bulletin "B"

## Talbot Engineering Corporation

66 Broadway, New York City



### "CURTINMADE"

## Spray Hoods

In rough and squally weather "you'll smile" like "Commodore Jim" if you have a "CURTINMADE" SPRAY HOOD to give protection to you and your boat.

Our Spray Hoods, Motor Boat Awnings and Boat Covers have been in demand ever since the introduction of Motor Boating. They are made to a standard of excellence. They add to the appearance and comfort of your boat and can be had in any color, weight or pattern.

Makers of

### "CURTINMADE"

SAILS  
AWNINGS  
SPRAY HOODS

TENTS  
TARPAULINS  
BOAT COVERS

Flags of Every Description

### Your Boat

If it's in the vicinity of New York we will be glad to measure it and give you an estimate; if at a distance write for our diagram by which you can give measurements.

Phone 6006 Broad

## JOHN CURTIN

Corporation

Established 1853

48 Front St.

New York

---

Every owner of a commercial motor craft, every live boat builder and every naval architect in the United States is going to know what you have to offer him if your advertisement appears in the September issue of MoToR BoatinG, the annual Commercial Number.

This issue will be mailed to every owner of a commercial motor boat, every naval architect, and every live boat builder in the United States, in addition to the 22,000 regular copies.

Let the confidence you have in the merits of your wares guide you in taking the largest space you have ever used for advertising in this special issue of MoToR BoatinG.

Remember there is no "luxury" tax on workboats or their fittings. There is no end to the workboat season. September begins the planning and building of 1920 boats. And it will be the biggest year ever experienced by the marine builder.

Notwithstanding the fact that the circulation of September MoToR BoatinG will be several times as great as our regular issues, *the advertising rates will not be increased*, and space can be purchased at the usual low rates.

Every boat owner and every one interested in boating as a pastime or as a business is waiting for your message—send it to them through the advertising pages of the Commercial Number of MoToR BoatinG.

***Our Service Department  
will prepare your copy without charge***

#### CLOSING DATES

*If you want to see advance proofs—August 5th.*

*Last closing date—too late for proofs—August 10th*

*Send your copy today.*



119 WEST 40th STREET

NEW YORK CITY

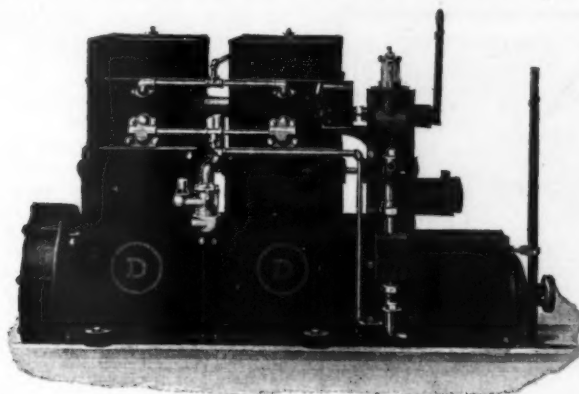


# THE JOHNSON MARINE REVERSE GEAR

Used on the New

## Delaware Marine Motor

Our No. 3 Model F Ball Bearing gear, in a special case design, was recently adopted on the motor shown below. After a trying test, we were assured that it had given the highest degree of satisfaction.



## Johnson Scores Again

The Delaware Marine Motor Company writes:

"We were running from a quarter to full speed along the beach at Cape May for over an hour, had the clutch constantly in and out, reversed, and every other way, trying to keep off the beach and yet close enough not to lose our land bearings in the heavy fog, and the clutch came to time whenever it was called upon."

It's just another indication of Johnson superiority. The Delaware builders are aiming to put out the best motor that can be made, and they are strong in asserting their faith in the Johnson Gear as a companion for it.

Every feature that goes to make up a good reverse gear is found in the Johnson. The persistence of our designers in eliminating the weak points has placed it far ahead of the field. By strict insistence on the best of material and workmanship, we have built up a sound reputation for putting quality in our product—and where quality is wanted, the Johnson Gear is selected.

If you want to get acquainted with a thoroughly reliable reverse gear, investigate the

## JOHNSON

the ideal gear for all light powered motors. Send us the size of your boat and engine, and we will suggest the proper gear for your use.

**Write Dept. 25 for Our Catalog**

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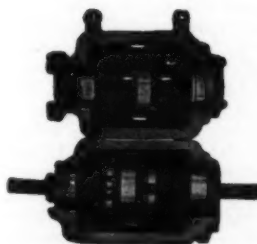
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2. Scandinavia: Wilh. Sonesson & Co., Malmö, Sweden, and Copenhagen, Denmark.
3. Australia: Edwin Wood, Pty., Ltd., 231 Elizabeth St., Melbourne, Victoria.
4. France: Glaenzer & Perreaud, 18 Faubourg du Temple, Paris.
5. Canada: Williams & Wilson, Ltd., 84 Inspector St., Montreal.
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Exterior.



Interior.



Cover raised.

**THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN**

*When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating*

## Carl Fisher Revolutionist

(Continued from page 82)

# COMFORT



## A *Speedway* HOUSEBOAT CRUISER

By combining comfortable living accommodations with special features of hull and machinery design, we are able to offer the unusual—a "12 months boat"—one that has light draft necessary for Florida waters, and seaworthy qualities for Northern cruising.

*A Yacht in Every Sense of the Word.*

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SHIPBUILDING CORPORATION  
MORRIS HEIGHTS NEW YORK CITY

was to follow, and finding in Miami the combination of ideal climate with every opportunity for sport and recreation that he craved, Fisher decided to make the city his permanent home and to share in the upbuilding and progress of the community. Accordingly, he bought a large stretch of uncleared land on what is now known as Miami Beach, a verdant peninsula about a mile wide lying between the Atlantic Ocean and Biscayne Bay, across whose three-mile width runs a broad concrete causeway connecting Miami Beach and Miami. This spot Fisher proceeded to transform into an ideal community where beautiful residences, provided with every modern comfort, would be surrounded with unexcelled facilities for outdoor pastime. To supplement the marvelous gifts of nature with man-made attractions that would create life's perfect enjoyment was his plan, and, at an expense of several millions of dollars, it was carried into action.

At Miami Fisher found unexampled opportunity for indulging in his favorite water sports, especially motor boating, the thousands of square miles of tropical bay and ocean affording an endless cruising terrain of strange and bewildering beauty. Casting his eye over the landlocked bay, he saw a made-to-order motorboat course for speed contests, and accordingly launched the Miami Mid-Winter Regatta, which he personally financed to start, though in recent years the event has been conducted under the auspices of the Miami Chamber of Commerce, with Fisher as chairman of the regatta committee. Fisher invariably enters all of the events on the regatta program, and usually wins a liberal proportion of the trophies, handling his boats with great skill. The world's record for express cruisers, 30.3 m.p.h., was made by himself at the helm of Shadow III, which he later sold to the United States Government for use on submarine patrol. During the last regatta, with prospects bright for breaking this record with a new cruiser, Shadow V, he sacrificed his chances by crashing into an empty skiff that knocked a hole in the side of his boat, to avoid running down the launch of the assistant starter, which had run into the course by mistake.

Several years ago Fisher took a marked interest in hydroplanes, building a number of them, called Presto, and racing them both at Miami and in other waters, principally in the Gold Cup contests at Manhasset Bay, L. I. Recently, however, he has turned his attention wholly to displacement boats, his contention being that hydroplanes have no practical value, whereas displacement craft are essentially worth while. Eventually, he hopes to see the development of roomy, comfortable express cruisers capable of averaging 40 or 50 m.p.h., in which long-distance cruises can be undertaken at automobile speed.

In connection with his motor boating activities at Miami, Fisher has been instrumental in forming two clubs that are certain to receive increasing attention as the years roll by. One of these is the Cocolobo Cay Club, a yachting and cruising organization whose purposes are chiefly social, and the other is the Miami Beach Yacht Club, the aim of which is to stimulate and supervise racing competition. The underlying plan of the Cocolobo Cay organization is to build clubhouses for its members on the various Florida Keys and other islands within cruising radius of Miami that boast of exceptionally good fishing or other natural attractions, such as submarine gardens and the like, at which club members can stay as long as they desire, surrounded by all the comforts of civilization. The club now has two establishments, one on Adams Key, south of Miami, a beautiful building fitted with every imaginable convenience, including electric refrigeration, and the other on Bimini, a tiny outrider of the Bahamas east of Miami in the Gulf Stream. A third clubhouse is under construction on another island in the Bahamas, and eventually it is planned to have half a dozen such buildings scattered among the South Seas. Needless to say, the members of the Cocolobo Cay Club are all men of prominence and distinction, and this organization promises to become one of the most noted among the yachting institutions of the United States.



Unit Power Plant Model "F" THOROBRED  
28-36 H.P., 4 1/16 x 5"  
Furnished with or without Unit Power Plant

**Red Wing Thorobred**  
THE MOTOR WITH POWER TO SPARE

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There's no one who appreciates the natural pleasures to be found in America like the man who has been overseas

facing the cannon on the soil of France. Of the millions returning to the home shores are thousands who are buying and building boats this year.

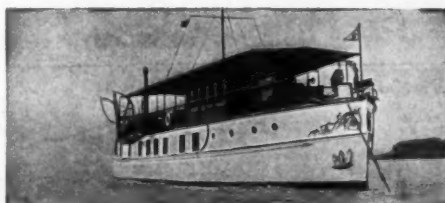
The Red Wing Motor Company asks an opportunity to tell returning soldiers about the famous Red Wing THOROBRED Marine Motor. It'll make you forget even the "cooties".

THOROBREDS come in four sizes, 14 to 40 H.P., and answer any reasonable power requirements. They burn either kerosene or gasoline. Write today for prices and facts.

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Place no contract for your boat for the Florida season, without communicating with us. It will pay you.



Built by us in 1914, for Mr. Albert Disston, for whose father, Mr. William Disston, we created the new type houseboat when we built the Cocomelo in 1909.

Since 1910 Mathis-built Houseboats have held unquestioned leadership every year. They will be further ahead than ever next season.

Look for our September advertisement, setting the newest, highest standards in houseboat construction and efficiency.

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*Specialists in Houseboats and Cruisers from 40 to 120 ft.*

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Some motors mote some times, but a Kermath motes always. A complicated this or that to spoil your pleasure cannot be found in the Kermath. Start your motor and then forget everything but the fun of navigating your boat. No need to get messy when you want to be clean—no need to spend your time in the engine room tinkering when you should be on deck.

KERMATH—Kermath is what you will hear from every boat owner who has ever had the opportunity of owning or of riding in a boat powered with a Kermath motor. Satisfied owners are our biggest advertisement. This one is only to ask you to investigate and to get you started on the right tack in selecting a real motor.

Join the thousands of boat owners getting all the fun of boating without its troubles. Convince yourself as others have done. Power your boat with a Kermath, the Alpha and Omega of motor construction and reliability.

The proofs of our claims will be sent you in our booklet.

May we send you a copy?

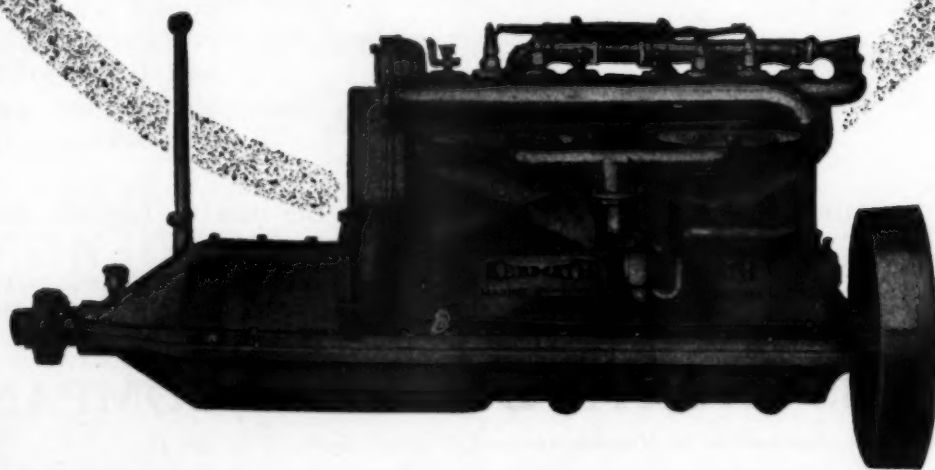
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Dept. 2

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Immediate  
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All Models



"America's Standard 4-Cylinder Engine"

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## Business Profits

### We Asked George—He Knew

"Every day I run my boat I am more thoroughly convinced that I have the best powered boat in this harbor." That's what George ——— said. That's saying a whole lot, but even that doesn't cover all we claim for the Kermath. Thousands of workboat owners find the Kermath the most economical, efficient and simple motor to be bought for the money—and then some.

Kermath engines have stood the test of time and service, and to-day stand first in the field of performance and results. When the Kermath was designed we knew the biggest thing we could give an owner was a motor too simple to get out of order. We did it—no freaks or frills, but good standard engineering practice that never fails to make good. We put the best we could buy into them and then built so many of them we could sell them at a lower figure than any smaller builder could.

Kermath engines are built for you and for us. They'll satisfy you and you'll boost us. Fair enough, isn't it? Kermath power is real power for the least money. The harder the service required the more you require a Kermath.

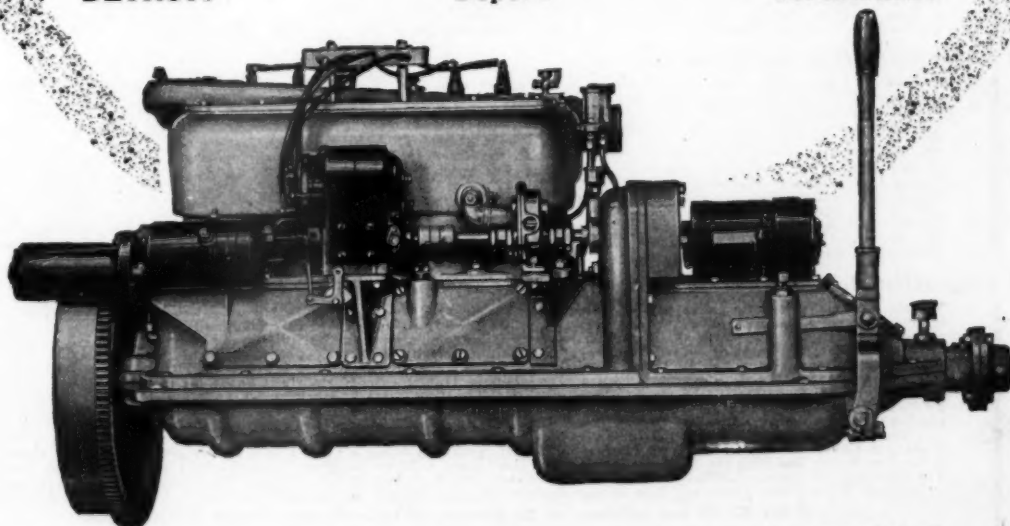
We showed George—We'll show you if you send for our booklet. Will you?

**KERMATH MFG. CO.**

DETROIT

Dept. 2

MICHIGAN



*Immediate  
Delivery of  
All Models*

# MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to their favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical hand-books, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

## Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gear, wireless outfits, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottom vs. Sharp Bilge; What are the Advantages of Flare? Raised Deck vs. Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantages of Bilge Keels; Open or Solid Deadwood? What Makes a Hull Seaworthy? The \$1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

## Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman sometime or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for a Cruiser; A Water-Tight Companionway; How to Canvas a Deck; Hinged Water-Tight Hatches; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Window Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice-Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screens for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

## Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in volume three of the series. Tells you how to steer, how to increase the factor of safety, and a host of other things relative to the proper running of your boat. The chart and compass are both fully explained in a clear and comprehensive manner. The list of contents will tell you more about it: Advice for the Beginner; Lessons Learned from Experience; Good Things to Know; Increasing the Factor of Safety; Which Way Should the Boat Steer? Why a Boat Steers Badly; Why do Boats Squat? Figuring the Boat's Speed; Ballasting the Cruiser; Getting Off Bottom; To Ride Out a Storm in a Motor Boat; The Why and How of Storm Oil; Preventing Fire; Handling Ground Tackle; Government Charts; Stowing the Anchor on a Cruiser; Diminishing Deviation; Preventing Electrolysis; Stowing and Using Charts; How to Make a Chart Case; Keeping a Motor Boat's Log; How to Make a Sextant; Tides and Tidal Waters; Taking Her Through the Canals; The Best All Round Dinghy; Towing the Tender; Handling the Dory in a Seaway; Getting the Tender Aboard; Planning for a Cruise; Equipping for a Cruise; Equipment for Offshore Cruising; Novel Events for Regatta Day; Handicapping; The Object of a Handicap Rule; Laying Off a Race Course; Measuring the Length of a Race Course; Preparing a Boat's Bottom for a Race; How to Build a Turning Buoy; Starting Boats in a Race; Stowing the Signal Flags; Fitting a Gun Mount; A Fish Box for Your Cruiser; A Cabin Wall Rack.

## Practical Marine Motors

Volume 4.—All about the marine motor; what it should and should not be. Tells why the automobile engine is unsuccessful in marine work. The best location for your engine, the ideal engine bed, the fuel tank, exhaust and countless other suggestions that will enable you to get the best results from your power plant. List of contents: Purchasing a Marine Motor; How Many Cylinders? Power per Cylinder; High Speed vs. Heavy Duty; Long Stroke vs. Short Stroke; Correct Motor Design; Changes in One's Power Plant; The Things that Cause Vibration; The Automobile Engine for a Boat; The Best Position for the Motor; The Ideal Engine Compartment; Placing the Engine in the Hull; Installing a Motor in a Canoe; Installing Power in a Yawl; Converting a "Banker" to Power Engine Installation in a Hydroplane; Putting Power in the Rowboat; Limits of Shaft Inclination; Constructing the Engine Bed; Getting the Motor Aboard; Lining Up the Propeller Shaft; The Best Exhaust; Mufflers vs. Under-Water Exhausts; Installing an Under-Water Exhaust; Primary Batteries for Ignition; Keeping the Ignition System Dry; Installing a High-Tension Magneto; From Make and Break to Jump Spark; Installing the Gasoline Tanks; Taking Care of Extra Gasoline; Spark and Throttle Controls; Constructing a Rear Starter; Propeller for Engine and Hull; Installing a Universal Joint; Gearing Motor to Propeller Shaft; The Automobile Throttle; Harnessing the Main Engine; Rebabbiting a Worn Bearing; Should Fuel Line be Inside or Outside.

## Practical Motor Operation and Maintenance

Volume 5.—One of the most valuable books of the entire set. Your motor's ills and how to cure them. This volume tells you how to adjust your carburetor, how to fit piston rings, how to remedy poor compression and a number of other things that will enable you to doctor your own motor. List of contents: Locating the Motor's Troubles; The Overheated Motor; Starting in Cold Weather; Overhauling a Marine Motor; How to Save Fuel; The Fuel Situation; Using Low Grade Fuel; How to Run on Kerosene; Supplying the Fuel to the Carburetor; Adjusting the Carburetor; Cleaning the Fuel Tanks; Cleaning the Gasoline Line; Stopping the Leak in the Tank; A Home-Made Gasoline Gauge; Carrying an Extra Supply of Oil; Mixing the Fuel and Lubricant; Remedying Leaky Compression; Killing the Carbon Jinx; Tool and Spare Parts to Carry; Removing and Replacing Piston Rings; Repairing a Leaky Cylinder; Grinding a Motor's Valves; Setting the Valves; Timing the Ignition System; Cleaning the Water Jacket; Making and Fitting a Gasket; Patching Up a Bearing; Straightening the Sprung Shaft; Truing a Bent Propeller; Removing the Flywheel; Separating Couplings and Pipe Fittings; Changing the Shaft Hole Location; Utilizing the Exhaust; Disposing of the Bilge Water; Heating a Small Cruiser's Cabin; Operating the Outboard Motor; The Clean and Quiet Boat; Charging a Storage Battery; When the Motor Stops Unexpectedly; Making a Unit Power Plant.

## Practical Suggestions for Handling, Fitting Out and Caring for the Boat

Volume 6.—This volume is an especially valuable one. You will find in it points covering the care of your boat that you never dreamed of before. Whether you are a beginner or a finished expert this book will give you a better knowledge of the handling of your craft than you can imagine. List of contents: Putting the Boat into Commission; Fitting Out a Thirty-Footer; Suggestions for the Beginner; Refinishing Bright Work; Keeping the Wood Surface Bright; Putting the Boat Out of Commission; Laying Up an Unsheltered Boat; Hauling Out for the Winter; Covering the Boat for the Winter; Launching from a Wharf; Correcting Faults; Lengthening Out the Boat; Mooring and Buoying; Taking Steps to Safeguard the Anchor; What to Use in the Bilge; Preserving the Wood in Boats; Emergency Rigs for the Cruiser; Auxiliary Sails for the Cruiser; Providing an Emergency Rudder; Preparing for Southern Waters; Stopping the Troublesome Leak; Replacing a Broken Plank; Removing Broken Lag Screws; Raising the Boat's Stern; Clearing the Propeller; Protecting the Bow and Stern; Open Boat Sleeping Quarters; Ventilating the Cabin of Small Cruisers; Converting the Open Boat to a Cruiser; Making a Cover for the Open Boat; Preventing Electrolysis; Building a Club Float; A Floating Boathouse; Constructing a Landing Stage; Building the Marine; Keeping the Thief Out; A Place for Your Shore Clothes; Stowing for Life Preservers; The Winter's Alterations; What Changes Shall I Make; The Satisfactory Bilge Pump; The Pressure Water System; Making a Pelorus; Your Storm Curtains; Life-Saving Equipment; The Absent Owner's Anchor Light; Mounting the Reverse Gear.

Price \$1.25 per volume, or \$6 per set of six volumes of over 1,000 pages.

The books measure 7 x 10 inches and are handsomely bound in cloth. Each volume is fully illustrated and printed in clear type on fine paper.

**MoToR BoatinG**

**119 West 40th Street, New York**

Advertising Index will be found on page 100

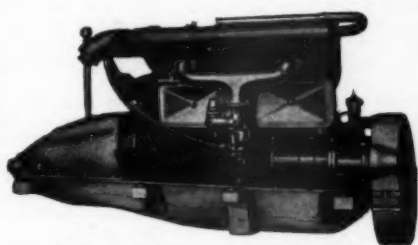




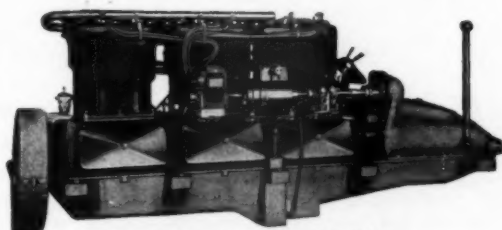
*"The Motor That Crossed the Atlantic"*

## What is "BUILT-IN SERVICE" ?

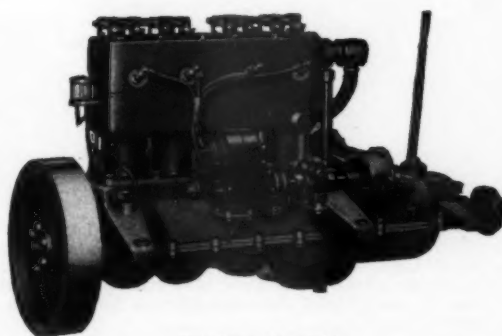
THE first SCRIPPS engine was built (without thought of the commercial possibilities) just fourteen years ago—the result of Commodore Scripps' desire and determination to own a motor that offered more boating enjoyment than was possible with any machines then obtainable.



**New Model D-4 Four-Cylinder**  
High Speed 40-50 Horse Power  
Medium Duty 25-35 Horse Power



**New Model D-6 Six-Cylinder**  
High Speed 60-75 Horse Power  
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**"Scripps Special"**  
15-20 Horse Power  
A good simple, popular-priced engine for smaller boats

And this first engine was so unusually successful that the enthusiastic comment of yachtsmen everywhere lead to plans for its immediate manufacture for the trade. Every SCRIPPS motor built since that modest beginning has measured up to the very highest standards with the ever increasing demands for refinement and betterment.

The high reputation which SCRIPPS engines enjoy throughout the world is not merely the result of accident. It is the return for constant development under the careful effort of an organization devoted to high mechanical ideals.

In fourteen years of marine engine manufacturing, the Scripps Motor Company has never had a bad year, a poor model, nor one serious mechanical setback. SCRIPPS engines have *always* been good engines. SCRIPPS engines will *always* deliver the greatest measure of real motor enjoyment, satisfaction and service. Pedigree counts. They are strong, practical, enduring, safe and certain above all things yet satisfy every modern requirement in appearance, comfort, quietness and smoothness of operation.

SCRIPPS built-in service means that careful blending of the best in design, workmanship, material and construction, that relieves you of all worry through the conviction that everything is right—that nothing will go wrong.

SCRIPPS built-in service also provides the perfection of every modern convenience for comfort and ease. Standardized electric starting and lighting, perfect freedom from noise, vibration, and mussiness make you unmindful of the mechanism that drives your boat whether your mood wills a slow smooth glide or full speed ahead.

Investigate carefully—Catalogs—any desired information—engineering help in the selection of power, etc., are cheerfully given, no obligation.

**SCRIPPS MOTOR COMPANY**

631 LINCOLN AVENUE DETROIT, MICH., U. S. A.

**"Every Moving Part Enclosed"**



## Back to Shore for Supplies

When you're in a hurry and a choppy sea makes rowing hard, an Evinrude on your dinghy or other small boat will get you there and back in short order.

Carry an Evinrude and you can change a rowboat to a power boat almost as quickly as you can lower it.

## EVINRUDE

**Detachable Motor for Watercraft**

furnishes dependable and unusual power. It is the standard outboard motor, with built-in flywheel type magneto, automatic reverse and other refinements.

A wonderful motor for fishing, clamming, "running around" and side trips where the large boat can't go.

Hundreds of power boat and yacht owners use the Evinrude. Nearly 100,000 Evinrudes have been sold—this motor is used by 25 governments.

*Catalog on request.*

## EVINRUDE MOTOR COMPANY

**73 Evinrude Bldg., Milwaukee**

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69 Cortlandt St., New York, N. Y.  
214 State St., Boston, Mass.  
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211 Morrison St., Portland, Ore.



## Starting Correctly to Build

*(Continued from page 33)*

A very expensive way to build up a deadwood, though nevertheless a splendid way is shown in Figure XIII. There is a separate piece of timber for the shaftlog which, after having been bored out in the usual way, is fitted with a stern bearing shaft and outboard, and with a stuffing box inboard. These are connected with a length of brass pipe threaded at each end onto which the stern bearing and the stuffing box screw. Thus one acts as a head for the other, and the pipe as the bolt. Small lag screws only are required in the end members as the pipe is the main source of strength as well as the agent for preventing leaks.

Showing that there are more ways than one of getting a hole through a shaft log, Figure XIV is exhibited. This type is especially well adapted for a long shaft alley. Although it must be cut on a table saw and is therefore not the type of construction amateur boat builders are usually equipped to do, I've included it because it has value and is therefore worth knowing about.

Especially in the larger boats construction of the kind shown in Figure XV is deemed good practice. Here the shaft log is built up of two pieces, each with a semi-circular groove which upon being fitted together forms a fair and true alley for the propeller shaft. Tongues are usually fitted as shown in the sectional view which effectually prevent leakage. The two halves are bolted together with the same bolts which tie the completed deadwood together.

For craft which are built with a flat keel and which are without a full deadwood, such, for instance, as those which carry the outer ends of their propeller shafts in a metal strut or hanger, the shaft where it enters the hull is taken care of by a wooden skeg with a stuffing box outside, as shown in Figure XVI. A lead sleeve should be inserted as a lining for the shaft hole, and it should be flanged as shown, both inside against the inner face of the keel, and outside within a recess or rabbit in back of the stuffing box. The box will hold the outer end secure, but the inner end should be well fastened with round head brass screws. This type, too, might well be used without the lead sleeve; substituting in lieu of it paraffin as described earlier in this article.

## To Victory on Victory II

*(Continued from page 68)*

for as soon as the sea went down Old Glory IV once again got astride and went by us at Rocky Point.

Victory II was abeam of Old Fields, 33½ miles from the start, at 3.17 p. m., having an average better than 10 m.p.h. up to this point.

The wind increased in force from the southwest until it had gained a velocity of perhaps 30 m.p.h. The sailing craft were now running neck and neck with us and we saw a spinnaker and two balloon jibs carried away.

Gardenia and Marlene II were still away in the Sound almost lost from view while we maintained our course some 3 or 4 miles off Long Island shore.

Soon after passing Stratford Shoal Light, Marlene II took the lead and continued to gain until she had passed through Plum Gut at which point she was leading Gardenia by probably 2 miles.

Off Horton's, which we passed at 6:45 P. M., the wind dropped and the sea moderated considerably. Up to this point we had been helped along by a favorable tidal current, but abeam of Horton's a flood tide began to set in which was to reduce our speed considerably for the rest of our journey. Orient Light was abeam at 8:16 while our speed for 7 miles from Rocky Point fell to 8.4 m.p.h.

Little Gull Light was abeam at 9 P. M. just as she lighted up. Our course from this point to the breakwater at the west harbor, Block Island, was now a straight one and should we steer true we figured that by setting our course at East 3½ South magnetic that we should pass the breakwater at Block Island at exactly midnight.

As we were passing through Plum Gut bucking a horsing head current we noticed Marlene II heading back toward Greenport. She gave us the signal that all was not well with her gasoline supply but refused our offer for assistance. Later we found out the facts from Commander Williams, and it seems that he had employed an "expert" on the afternoon before the race to adjust his carbureter. The expert had opened the needle valve some five complete turns more than he should have with the consequent result that the motor not only choked herself to death as far as power was concerned but consumed 100 gallons of gasoline in half the journey and caused Marlene II to drop out of the race and put into Greenport to replenish her fuel supply.

After passing abeam of Little Gull Light, we noticed that

*(Continued on page 94)*

# Immediate Delivery on New Gray Motors

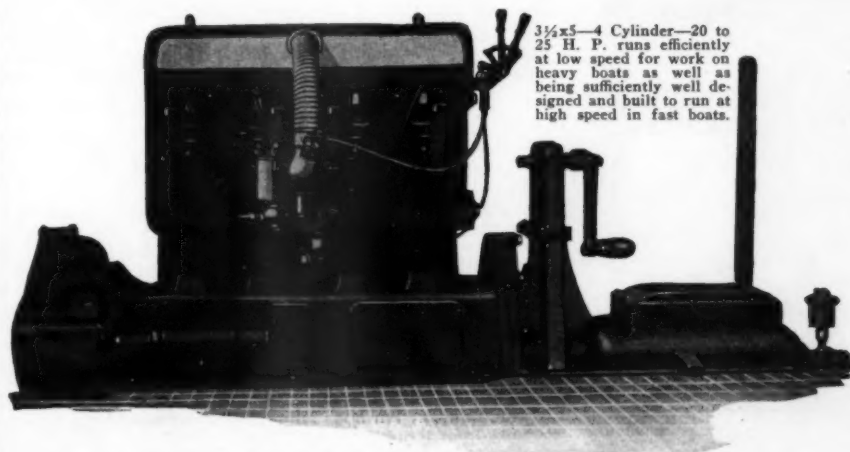
We now have this motor in production in greater volume than any like marine motor that has ever been produced. Our new plant has the capacity at the present time of thirty of these new "VM" motors every nine hours and you can depend on immediate delivery on receipt of your order from this date on.

The bearings on this motor are *big bronze back bushings* made of the highest quality of bearing metal it is possible to secure. The *lubrication* system is force feed to all main bear-

ings by a positive direct acting oil pump and positive distribution to each one of the connecting rod bearings.

Our valve-in-head design gives you the greatest efficiency and is so recognized now by engineers of any type of motor built.

Our new cylinder head with its hot-spot construction, exclusively our own on which we have applied for patents, enable you to use the *lowest grade gasoline* or kerosene with satisfaction in this motor. It also enables you to throttle the motor and get efficient results at very low speed.



3 1/4 x 5—4 Cylinder—20 to 25 H. P. runs efficiently at low speed for work on heavy boats as well as being sufficiently well designed and built to run at high speed in fast boats.

VE—Model 4 x 6—25 to 35 H. P. 4 Cyl. 4 Cycle  
Valve-in-head ready for immediate delivery

The motor cannot back-fire and set your boat on fire.

You can have enclosed flywheel or not, as you choose.

Standard Electric Starters Fit the job without "tinkering".

**Gray 2-Cycle Motors \$84 Upward. Standard the World Over**

## GRAY MOTOR COMPANY

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## Tell Us About Your Boat— We'll Tell You About the Proper Motor to Drive It

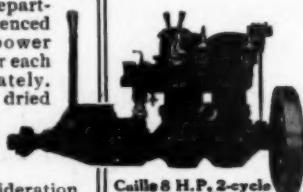
**W**E have saved hundreds of boat owners thousands of dollars through our Individual Service Department. Many owners think they need a much larger motor than is actually necessary. Others buy motors too small. In neither case does the user secure complete satisfaction.

Our Individual Service Department is made up of experienced and trained marine power specialists. They consider each individual boat separately. They have no cut and dried recommendations. The length, beam, draft, speed desired, class of service, type of boat—all are taken into careful consideration in each instance.

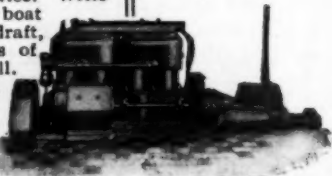
You can positively rely upon their recommendations. They are unbiased and unprejudiced. And their assistance is free to anyone—whether a Caille motor is used or not. Use this service. Write us. Tell us about your boat—its length, beam, draft, speed desired, class of service and type of hull. We'll write you fully.

The Caille line of motors is complete in every respect, from outboard motors to 30 H. P. inboard motors. It covers all classes of motors. Some have electric starters, provide electric lights, have bulkhead control and all the refinements a boating lover could desire. Others are more simple and less expensive. Write us. Get complete details. Use our Individual Service Department. It's maintained for you.

**Caille Perfection Motor Co.**  
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**Caille 8 H.P. 2-cycle Unit Plant. Reverse gear mounted on same bed with motor. Ideal for average pleasure boat.**



**Caille Aristocrat 14 H.P. 4-cycle Motor with Electric Starter and providing electric light for boat.**



# CAILLE

On Marine Motors Is a Hallmark of Quality

## What Should a Small Cruiser Be

(Continued from page 20)

the starboard side and the reverse lever on the port side. Thus the man at the wheel will be able to control the boat without having to shift his position. Tools can be placed in racks over the engine on the cabin bulkhead.

To feed our engine two cylindrical galvanized range boilers or just the plain steel galvanized tanks may be used and they are about the most economical that could be provided. Forward in the cockpit and on the port side should be one small tank for lubricating oil, another for kerosene, and a third for alcohol for the stove. Faucets would be better in these tanks and they may be filled from the deck. The water tank would go snug into the bow, be of galvanized iron, and raised high enough to flow by gravity.

In the matter of motors there is much divergence of opinion, but one of two or three cylinders developing from, say, 400 to 600 r.p.m. would be excellent. This would eliminate a large and heavy motor, for one under 400 r.p.m. would be cumbersome and offer no compensating advantage in a 25-foot boat, while over 600 would not be necessary, as our craft is not a special boat, and a small, insufficiently powered wheel would not move us along as we should go. If our wheel turns at about 450 r.p.m. with an 8 h.p. motor our craft should make anywhere from  $6\frac{1}{2}$  to 8 miles an hour, quite sufficient for ordinary purposes.

In a 25-foot boat there will be only room for two berths if we wish to be able to reach all parts of the motor and to really reach the galley, but we may secure a third berth by buttoning a strip of heavy canvas over screw heads in the top of the other two berths a few inches from the edge. The galley would be partitioned off with a door leading into it from the cabin. It will be necessary to place the cylinders of the motor in the cabin, but the reverse gear will extend beyond into the cockpit. In order to get this gear out of the way a small bridge deck about  $1\frac{1}{2}$  feet in height and 2 feet long could be built. This would afford room to place the clutch under.

Finally, in the matter of ballast and ventilation, your own ideas will doubtless prevail in the end. The distribution of weight, if spread out over the bottom of the boat, will make it more evenly balanced, and, if possible, don't stow it all along the keel. Ventilation is extremely important, and you will find that if you allow a space between the ceiling and the clamps and around the under lockers it will prevent decay. If you connect the bilge by a hood ventilator it will continually force fresh air under the flooring.

## To Victory on Victory II

(Continued from page 92)

the two leaders Gardenia and Old Glory IV were following the same course and were less than a mile apart. They were taking a course which appeared to us to be decidedly too far to the northward considering the flood current and should it set in thick the two leaders would miss the Island altogether and the next stop would be the west coast of Europe. Gardenia was aglow with lights from stem to stern like a young ocean liner and it was an easy matter to keep tabs on her course. It was still easier for Old Glory IV which was directly astern of the leader.

At 10:25 Montauk was abeam and we were then on the last leg of the trip. An hour and a half more would put us safely at anchor in the west harbor if all went well. The conditions could not have been more perfect. The motor was running as smoothly as a sewing machine, not a skip or a miss from it, and the sea was dead calm with only a ground swell and we speeded down the sides of the waves at a race-horse gait. A very few minutes after we were abeam of Montauk we picked up the North light on Block Island and not much later the blinker on the breakwater showed up dead ahead. Just ahead of us but at considerable angle from our course was Gardenia and Old Glory racing for the finish line. At 11:47 the former went from view behind the pile of rocks and six minutes later Old Glory was lost from our vision also. We figured that we were about the same distance astern. At just midnight we picked up the lights on Commodore Sunderland's Committee Boat, Emoh III, and at 12-02-10 we heard him call time. Our only other worry now was the watchful waiting of the 21 minutes' time we had to allow Kodak. If she was not in at 12-23-05 we would be the victor. That time passed with no Kodak and Commodore Jackson remarked quietly: "Well, I've tried for the Block Island prize for fourteen years and at last I've copped it."



# Frisbie an' I

shortest cut from  
Spark Plug to Piston

In the Frisbie Valve-in-Head Motor the spark fires straight into the combustion chamber, right across the piston head, not at right angles and from a distant pocket. This causes a quick, positive explosion, and develops the full power impulse squarely on top of the piston. Since there are no pockets in the



in which burnt gas may lurk after the exhaust, the fresh gas enters a practically clean cylinder. This means greater piston pressure and more mileage per gallon of gas, and you can, if necessary, use a lower grade fuel with better results.

There are many other fine points about this motor that you ought to know.

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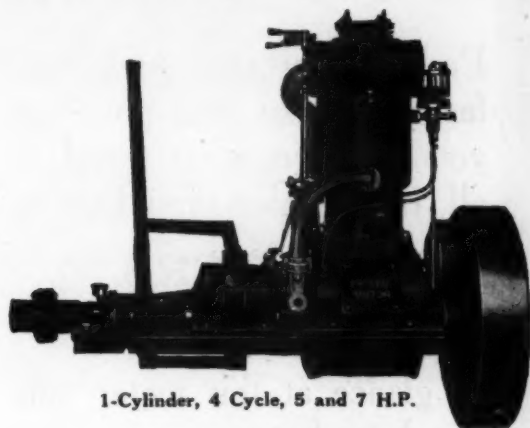
describing complete line of Frisbie Motors for all medium duty work.

### 5 TO 75 H.P.

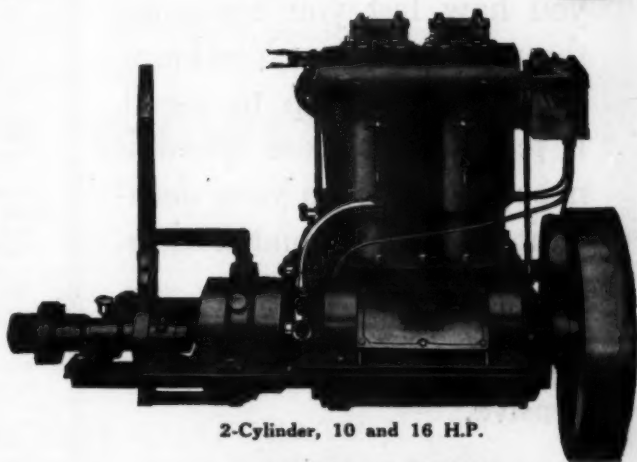
1-cyl., 4 cycle, 5 and 7 H.P.; 2-cyl., 10 and 16 H.P.; 3-cyl., 18 and 25 H.P.; 4-cyl., 30 and 40 H.P.; 6-cyl., 50 and 75 H.P.; also kerosene motors.

**FRISBIE MOTOR CO.**

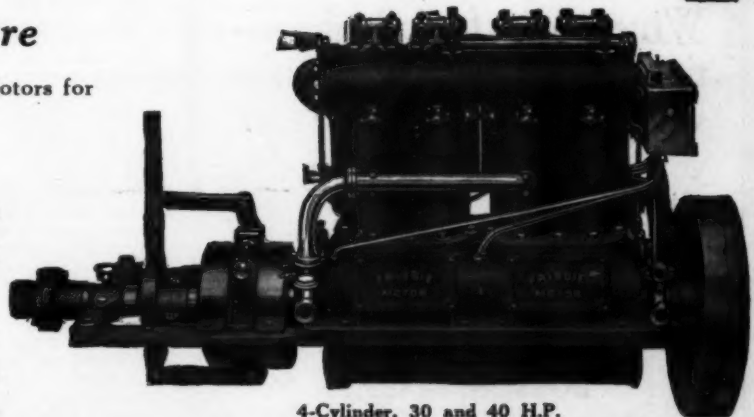
7 College St., Middletown, Conn.



1-Cylinder, 4 Cycle, 5 and 7 H.P.

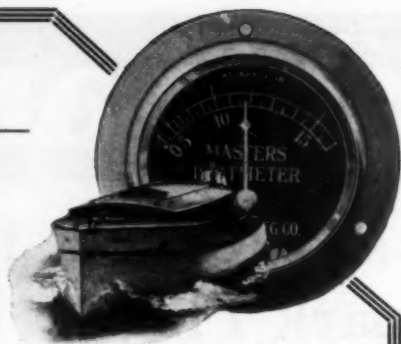


2-Cylinder, 10 and 16 H.P.



4-Cylinder, 30 and 40 H.P.

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GUESS—  
KNOW  
YOUR  
SPEED**



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Perhaps you were told how fast your boat will go—but you don't *know* its speed at all times unless you have a

A glance at this meter tells you how fast you are going through the water. You know if your boat is up to speed. It tells you if more speed is necessary to reach your destination at the appointed time.

The Boatmeter is easy to install—is reliable, and inexpensive.

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**Masters Mfg. Co.**  
7 Woolsey Square, Jamaica Plain  
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## **Maybelle V Wins New York to Albany Race**

(Continued from page 16)

her, although we felt sure that people were sleeping aboard of the craft. We did not see her until we were right on top of her, and only good seamanship saved us from cutting her in two. As it was, we ran so close to her that we could have stepped aboard. Otherwise everything worked fine. Once we had set the engine at 340 revolutions it ran so perfectly that we decided to hold it. The motor ran so perfectly that there was no chance for us to display our skill as mechanics. It was a 20-22 heavy-duty Clay. We had a Columbia wheel, a Paragon clutch and used a tachometer.

"Our crew consisted of Alfred Hewitt, ex-commodore of the Excelsior Yacht Club; Hunter Latimer, vice-commodore of the New York Motor Boat Club; Nile Ellis, William C. Storey, Mortimer Seiffer, Thomas Williams, and Thomas Lee, besides myself."

## **Race for Displacement Boat Championship of North America**

(Continued from page 54)

- (n) Boats shall race without handicaps or time allowances.
- (o) Competing boats shall be fitted with at least three transverse bulkheads, have the motor compartment entirely closed in, and have seating accommodations for at least four persons.
- (p) The time of start for each race of the match shall be 3 P.M. No postponements for any cause shall be allowed.
- (q) Each motor in a competing boat shall be fitted with an efficient self-starter and mechanical gear.
- (r) Competing boats must demonstrate to the satisfaction of the Race Committee that they are capable of a speed of at least 40 miles an hour.
- (s) The hulls of competing boats must have no breaks in the longitudinal continuity of the immersed surface, not more than one lifting surface and must conform to the committee's ideas of what is generally classed as a Displacement type.
- (t) Rudders known as bow rudders shall not be used on competing boats.

### **Article VIII.**

The Race Committee shall, by mutual consent and agreement, fix and decide all the terms and conditions of the match (not inconsistent with the terms and conditions of this instrument), whether relating to dates, courses, notices or any other matter whatsoever pertaining to the match or preliminary thereto, except that the challenged club or person must immediately, upon receipt of the first challenge, notify in writing the Racing Commission of the American Power-Boat Association of the fact and transmit to it a copy of such challenge; and the date for the first race of such match shall not be set for a day earlier than thirty days after the course, dates, and any other matters have been agreed upon and written notice of same sent to the Racing Commission of American Power-Boat Association.

### **Article IX.**

If deemed desirable, the terms of this agreement may be modified by the American Power-Boat Association while the trophy is in its possession, and when not in its possession by agreement between the American Power-Boat Association and the Club having custody of the trophy, provided, however, that no modifications shall be made during the pendency of any challenge unless consented to in writing by all the challengers.

### **Article X.**

In case the Club having the custody of the trophy shall be dissolved, or shall cease to exist or shall they or persons holding trophy refuse to or fail to comply with all the terms and conditions thereof, the said trophy shall thereupon revert to the American Power-Boat Association, and shall continue subject to the terms and conditions of this instrument.

### **Article XI.**

This instrument shall be executed in quadruple originals, one of which shall be preserved with the archives of the American Power-Boat Association, one shall accompany and be delivered with the trophy wherever won and transferred. One shall be retained by Carl G. Fisher and one retained by James A. Allison.

The trophy shall be delivered to the Chairman of the Racing Commission one week prior to the date set for the first race of any match for the said trophy, and a receipt given by the Chairman of the Racing Commission to the Club, thus delivering the trophy.

After the finish of a match for the cup, the Chairman of the Racing Commission of the American Power-Boat Association shall have the trophy suitably engraved with the name of the Club and the boat winning same with date, and shall deliver said trophy to the proper official in the Club or to the individual winning same, taking a receipt from Club receiving the trophy.

The holder shall furnish bond and insurance to assure its safe keeping, preservation and return in such amount as may be determined by the American Power-Boat Association.



## COLUMBIAN BOAT EQUIPMENT



## Harry Stutz' New 23-Mile Cruiser

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## COLUMBIAN PROPELLERS

of 24" diameter by 22" pitch, driven at 1375 r. p. m. by a pair of 150 H. P. six cylinder Model "F" Sterling engines.

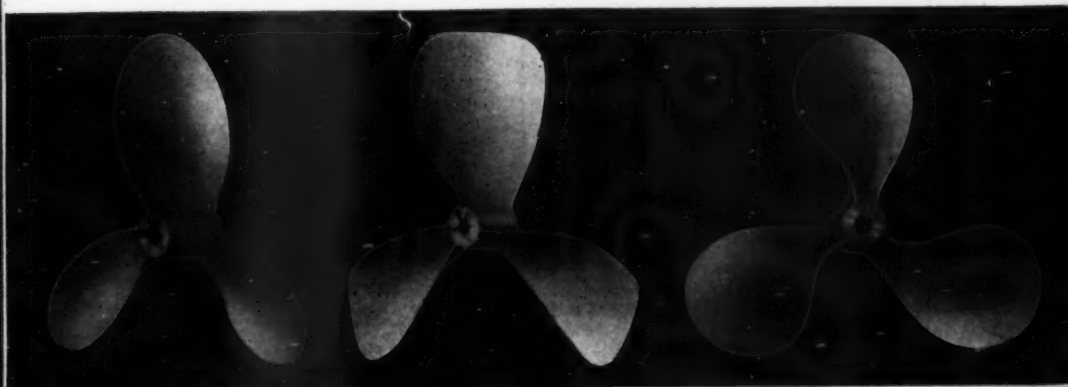
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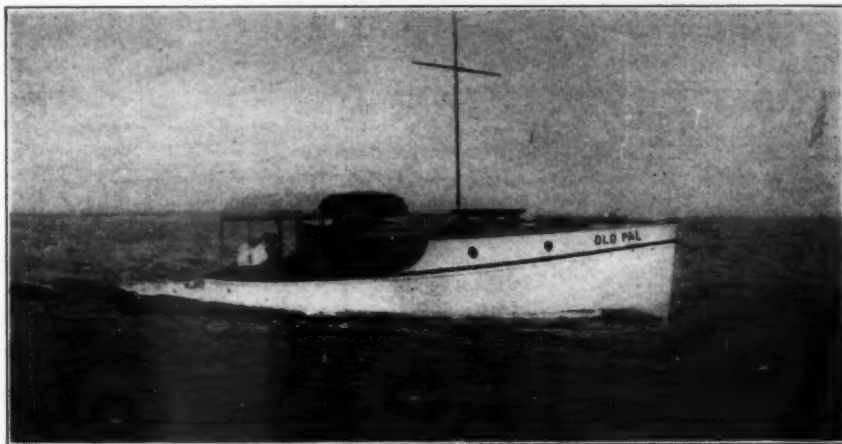
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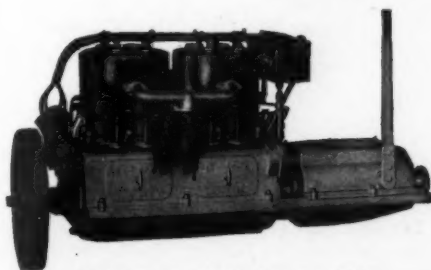
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